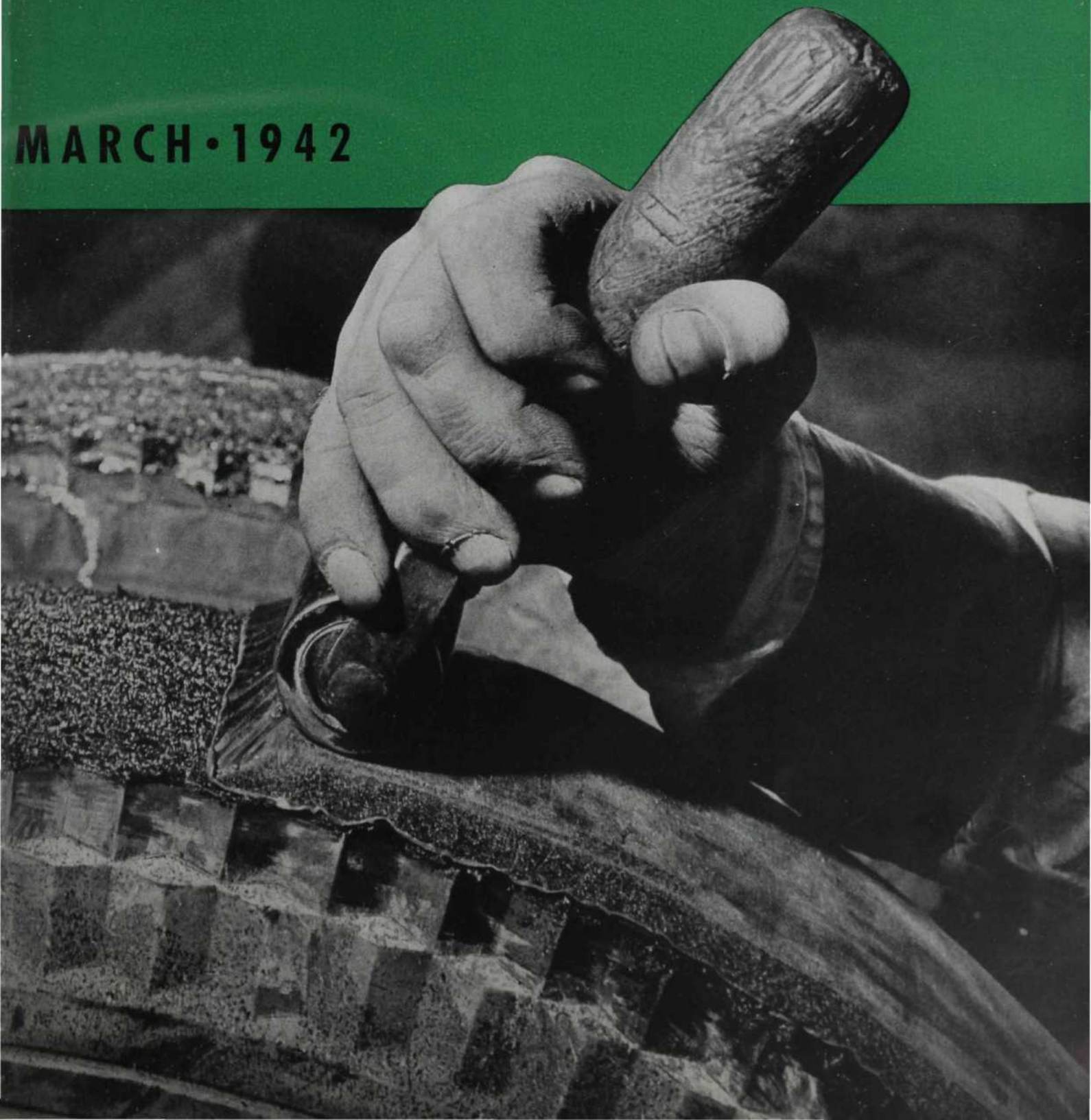
NATION'S BUSINESS

MARCH • 1942





"We're backing them up"

Marching right along with the armed forces of this country are thousands of telephone workers.

They work side by side with the Army and Navy. Wherever the need is communications, you are likely to find telephone men and their trucks and materials.

Day and night the order is for speed and more speed.

They wear no uniforms, these telephone workers, but men in uniform know how much they are putting into the Nation's biggest job. They see it first-hand and they know it is first-rate.

BELL TELEPHONE SYSTEM

"THE TELEPHONE HOUR" IS BROADCAST EVERY MONDAY EVENING OVER THE N. B. C. RED NETWORK



Built for Main Street . . .
But they made good on the Burma Road

A typical example of B. F. Goodrich leadership in truck tires

THE Burma Road is an incredible highway. It's a 700-mile corkscrew twisting perilously through jagged mountain ranges. It's narrow, unpaved, "scratched out of the mountains with their fingernails," as an American engineer described it. Yet this road with its treacherous curves and steep grades, often blocked by landslides and pockmarked by bombs, has served long as China's lifeline.

Here a fleet of American-built trucks, many equipped with B. F. Goodrich truck tires, have been rolling day and night delivering the goods over a road called impassable.

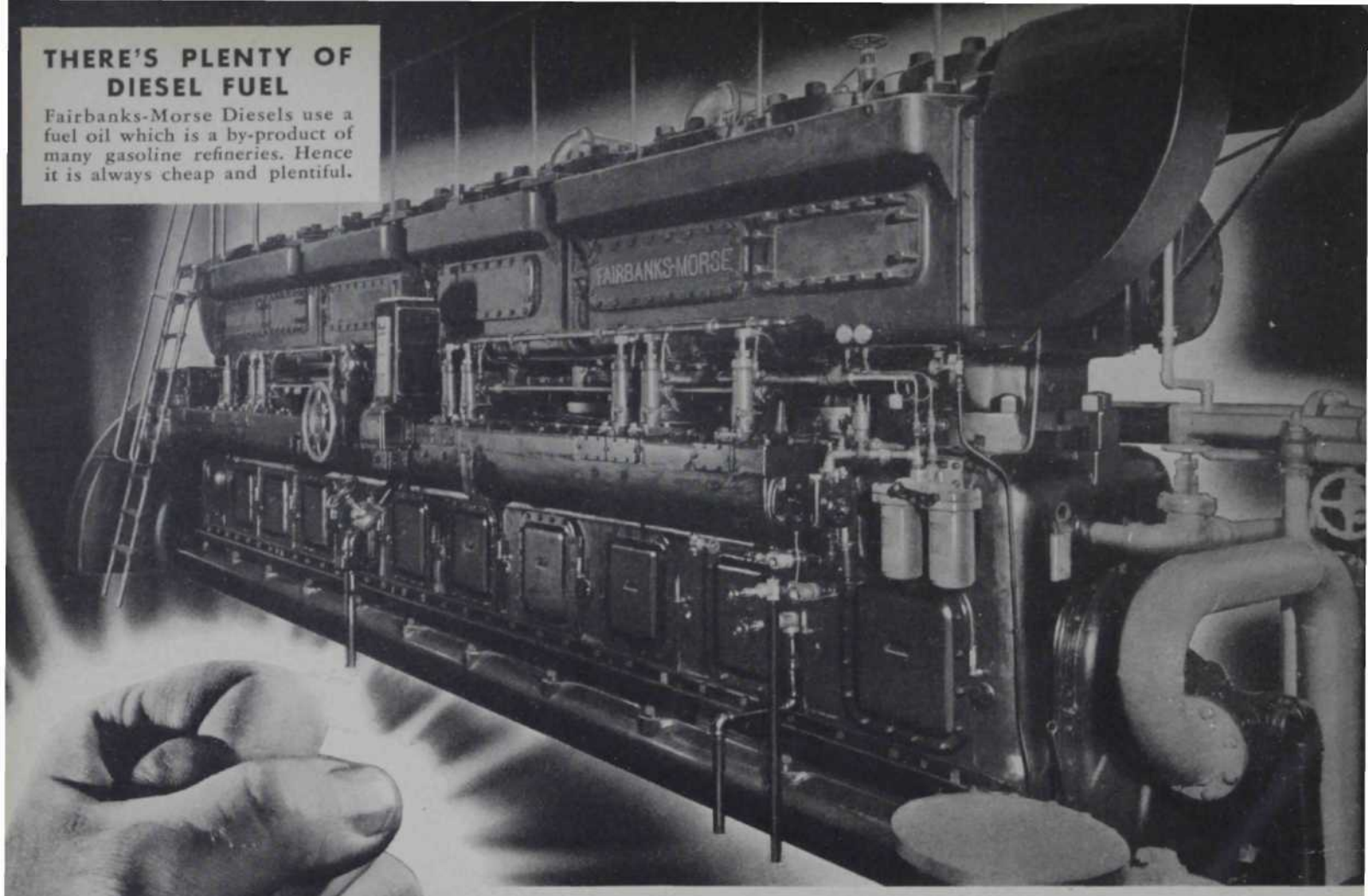
These tires are the same "First in Value" tires that are the choice of truck owners on Main Street, U. S. A. In fact, they were built for the everyday job of hauling food and steel and motor freight.

The fact that B. F. Goodrich Speedliner Silvertowns made good on the Burma Road is an indication of the extra quality built into Silvertowns.

If you are permitted to buy tires for your trucks, get these tires which last you longer, serve you better, and conserve rubber for defense. All Silvertown Tires are now fortified with Duramin, an amazing B. F. Goodrich chemical discovery which adds thousands of miles to tire life. See the B. F. Goodrich man *first*, for B. F. Goodrich is First in Rubber.



Nation's Business is published on the 30th of every month by the Chamber of Commerce of the United States. Publication Office, Washington, D. C. Editorial, Advertising and Circulation Offices, 1615 H Street, N. W., Washington, D. C. Subscription price $3.00 one year; $7.50 three years; 25 cents a copy. Entered as second-class matter March 20, 1920 at the Post Office at Washington, D. C., additional entry at Greenwich, Conn., under the Act of March 3, 1879. Printed in U. S. A.



THERE'S PLENTY OF DIESEL FUEL

Fairbanks-Morse Diesels use a fuel oil which is a by-product of many gasoline refineries. Hence it is always cheap and plentiful.

POWER

TO WIN THE WAR!

hat extra power you need—will you provide it in a way hich will:

. avoid peak penalties and demand charges?
. give dependable stand-by service at low cost?
. permit generating hard-to-buy, off-standard types of current which certain equipment demands?
. keep your unit power costs low?

You can answer "yes" to *all* these questions—if you generate your own extra power with Fairbanks-Morse Diesels. But—don't expect uninterrupted, low-cost power from just *any* Diesel. For *power to win*, you must use the *right* Diesel for the job . . . a Diesel that has *stamina* . . . that's built not merely for low fuel cost but also for *low maintenance cost* in sustained heavy-duty service.

If you need more power, it may pay you handsomely to have an F-M power engineer study your needs and submit recommendations. No cost, no obligation. Simply write Fairbanks, Morse & Co., Dept. C56, 600 S. Michigan Ave., Chicago. Branches and service stations throughout the United States and Canada.

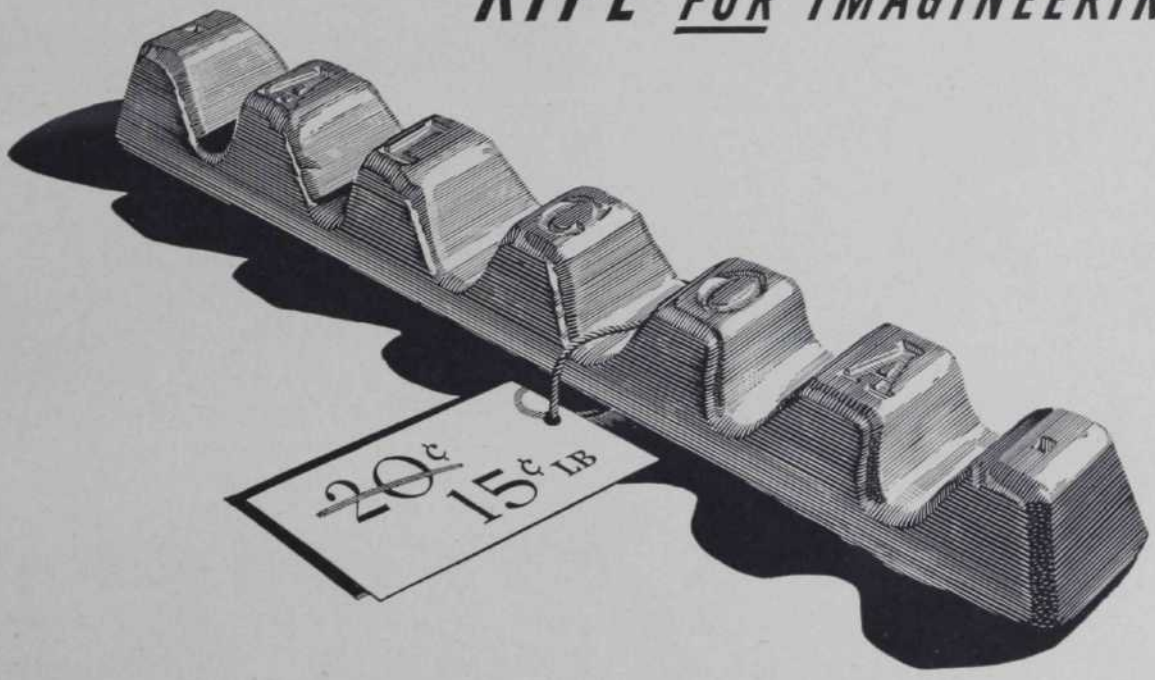
AIRBANKS·MORSE DIESELS

DIESEL ENGINES ELECTRICAL MACHINERY MAGNETOS RAILROAD EQUIPMENT WASHERS-IRONERS STOKERS
PUMPS MOTORS FAIRBANKS SCALES WATER SYSTEMS FARM EQUIPMENT AIR CONDITIONERS

LOWER PRICES

—MADE BY IMAGINEERING

RIPE FOR IMAGINEERING



THERE IS deep significance in the fact that the price trend of Alcoa Aluminum is in reverse.

As a cold fact, it means that much Imagineering has been at work, driving so hard at costs and processes that in the face of all conditions, the price of ingot aluminum could be reduced from 20c to 15c a pound.

As an achievement, it saves the Government, our only customer now, many millions of dollars a year.

As a tool for the future, that price trend has amazing possibilities. The things peacetime America will want to do will have to be done cheaply. The things peacetime America will have to sell—in order to provide jobs for all—will have to be made cheaply. Here is a price trend that cuts through the whole structure of materials.

What an opportunity for Imagineering, for letting your imagination soar and then engineering it down to earth. We coined the word to describe what industry can be doing about the future.

We have driven the price of Alcoa Aluminum down to provide one grand material to work with.

And we are prepared to work with you, however you may suggest.

ALUMINUM COMPANY OF AMERICA, 2125 Gulf Building, Pittsburgh, Pennsylvania.

ALCOA ALUMINUM

QUESTIONS

manufacturers of essential products are asking about

FLUORESCENT LIGHTING

Can G-E Fluorescent Lighting speed production — increase manhours?

Definitely. Where people see better they work faster, easier, with less strain. There is less spoilage and fewer accidents. All of these things add productive manhours without adding floor space, men or machines.



Can you prove it?

Many actual installations prove it. ". . . 15% less time to make settings and adjustments for machinery," says one company. ". . . spoilage down 8%, output up 4%," says another. Others say: "Night force now as efficient as day force." Another, "... spoilage reduced by 25%." These are only a few examples of the efficiency gains with properly installed G-E Fluorescent lighting.

Does G-E Fluorescent Lighting decrease the rate of plant accidents — spoilage — errors?

Poor light—fast moving machinery—breed danger and error. Seeing easily, quickly and accurately means safer seeing. *In one big punch press room,* accidents dropped 11% after G-E fluorescent installation. *A machine shop* reported a 5% increase in production per manhour, a 25% reduction in scrapped pieces and a 50% reduction in accidents due to poor seeing.

Can I afford Fluorescent Lighting?

Many manufacturers are getting real and immediate production increases, as reported above . . . and also fewer accidents, less spoilage. The question is not . . . "Can you afford fluorescent light?" . . . but rather . . . *Can you afford to be without it?"*



Can I get the necessary equipment?

While General Electric does not make them, over 100 tested, certified fixtures are made by many manufacturers...built to rigid specifications set up by MAZDA lamp makers in your interest. *These Certified fixtures are still available through G-E lamp distributors and dealers.* Look for *certified* fixtures with the Fleur-O-Lier label (right) or the RLM label to be sure of getting lighting fitted to your needs.



What major advantages do G-E MAZDA F lamps give me?

All the advantages of MAZDA Research, in addition to the benefits of General Electric's over 60 years of lamp-making experience and precision manufacturing. You get the wide choice of sizes and colors from G-E's complete line of lamps, plus the expert advice of G-E Lighting Engineers on how to get lighting fitted to *your* job. And *the G-E mark on a fluorescent lamp is your assurance of maximum light for the current consumed.*



G-E MAZDA LAMPS

GENERAL ELECTRIC

LARGEST IN THE BUSINESS FIELD
359,171 A.B.C.

NATION'S
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Chamber of Commerce of the United States

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BRANCH OFFICES—*New York*, 420 Lexington Ave.; *San Francisco*, 333 Pine Street; *Dallas*, 1101 Commerce St.; *Chicago*, First National Bank Building; *Atlanta*, Chamber of Commerce Building; *Canadian representative*, 530 Board of Trade Building, Montreal, Quebec.

As the official magazine of the Chamber of Commerce of the United States this publication carries authoritative notices and articles in regard to the activities of the Chamber; in all other respects the Chamber cannot be responsible for the contents thereof or for the opinions of writers.

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VOLUME 30 NUMBER 3

☆ A TRIBUTE TO THE GALLANT MEN OF AMERICA'S MERCHANT MARINE ☆



HIGH ON THE ROLL

of those who serve...

FOR their stern facing of grim jobs . . . for their splendid work in the delivery of essential War supplies throughout the world... AGWI salutes the determined fighters of our sea-route fronts — the men and officers of America's Merchant Marine!

Theirs is a responsibility that can never be relaxed . . . through long sea days . . . in tense vigils of the night. On them, and their valiant efforts, much of the final Victory will depend.

And when Victory is won — high on the roll of those who worked with fortitude to save our way of life will surely be the names of all who are so vitally contributing to the defense of the freedom of the seas.

It is a source of pride to AGWI that its employees . . . loyal, alert Americans all . . . will have their full share of that well-earned glory.

Eugene Bloom

PRESIDENT

ATLANTIC GULF and WEST INDIES STEAMSHIP LINES

Foot of Wall St., New York

CUBA MAIL LINE ★ PORTO RICO LINE ★ CLYDE-MALLORY LINES ★ SOUTHERN S. S. CO.

Cuba, Mexico, Puerto Rico, Dominican Republic, Texas, Florida and the South

AGWI LINES



WRAPPING MACHINES in the Victory Program

They play an important part...Keep them at top-notch efficiency

A vast quantity of goods essential to the civilian population and our armed forces must be packaged . . . And with increased demand, steady, fast production is more important than ever.

With our nation-wide service and offices located throughout the country, we are in a position to give you the skilled service that will assure highest efficiency . . . We can help you, too, in adapting your machines to new needs or different types of wrapping material . . . And we may likewise be able to show you how to *save material.*

New Machines

If you require new wrapping machines to meet new needs, don't hesitate to call on us —particularly if your production is essential to the Nation's war effort.

Our experience in assisting manufacturers to overcome present packaging problems may prove of value to you. So why not bring your problems to us? Our nearest office is there to serve you.

PACKAGE MACHINERY COMPANY
Springfield, Massachusetts
New York Chicago Cleveland Los Angeles Toronto

THROUGH THE *Editor's Specs*

Theory meets fact

A FARMER writes that he is more puzzled than comforted by frequent assurance that the national debt is nothing to worry about since the Brain-trusters assure us that "we owe it to ourselves." He describes his situation thus:

I bought a farm and have paid off all but a few thousand dollars. Interest and a substantial part of the principal are due. Farm labor has gone to war work, and I cannot earn enough by my efforts alone to meet my obligations. I have asked the banker who holds the mortgage on my farm to credit the note with my part of the $60,000,000,000 debt the Government owes me, which I will gladly transfer, but he refuses. I figure as one of 130,000,000 persons in this country, my share of the $60,000,000,000 the Government owes is about $462. I should like to get it now, as it would prevent foreclosure on my farm. The banker, a conservative, tells me the Government does not owe me anything, but on the contrary I owe the Government $462. He explains that, if the Government owed me, it would be paying me interest, and the fact that my taxes have been raised to pay interest is the best evidence that it is I who owe the debt. If you think the banker's attitude is subversive I shall be glad to give you his name.

The answer can be simplified by illustration. Let us suppose four men are on an island, and each has a bushel of corn. Each borrows a bushel of corn from the other and feeds it to the birds. In the end they are no worse off because each is owed a bushel of corn. This vindicates the "owe it to yourself" theory. However, something is to be said for the banker's old-fashioned theory. Although each is owed a bushel, the fact remains that there isn't any corn.

Letting the partners know

WESTERN ELECTRIC has long devoted top brains and top effort to promote an understanding of its job both to employees and the public.

In New York it filled a large hotel-ball-room for several nights with 5,000 employees and their families.

In Chicago it used a school hall for 2,000 workers, their wives and children.

Advance plans provide a total audience of 40,000 thus to see Western Electric's defense picture "Telephone Arsenal" with a talk each time by a company executive.

To most concerns, that would be the end, and the job would be well done right at that point.

But W. E. follows with "dancing and refreshments" to bring worker, family and management a little closer.

Vice President P. L. Thomson will tell you how it's done, if you want to ask him.

Home front notes

CIVILIAN defense can be carried on by individuals as well as by organizations. Mrs. Arthur Lindsey of Third Avenue, Brooklyn, doesn't like sailors to ring door bells or to annoy women. She had one arrested recently for such goings-on. The sailor apologized in court the next day although both the judge and Mrs. Lindsey had difficulty in understanding him. Mrs. Lindsey had knocked out four of his teeth when protesting his conduct the evening before.

ATTORNEY General Biddle, not to be outdone by the Navy, which gives an E to business firms for excellent performance on contracts, has devised an award in his own bailiwick. Every inmate of the Atlanta Federal Prison who increased his defense goods production by 100 per cent in 1941 has been given "Special award of merit" by the Attorney General.

THE OTHER day some one told us that there are 7,000 questionnaires of one kind or another which business people get from the Government. NATION'S BUSINESS has limited itself to one in order to maintain a proper proportion. Ours goes to correspondents who wish us to pass on their military advice on strategy and tactics to the Army and Navy. With no intent to curb healthy discussion and debate, we think we should ask for the qualifications of such contributors. So we send 'em a card which reads:

Did you ever believe:
1. General Mud would save Poland.
2. The Germans have cardboard tanks.
3. The French Army is the best in Europe.
4. The Russians would last eight weeks.

5. It's just another European scrap.
6. The Japs expect to lose quickly.
7. Brown eyes are bad bombers.

If the answer to any of these is "Yes," then we do not take up their "plan" with Admiral Stark or General Marshall.

Cheerful note

WE ARE happy to chronicle an instance of where the proverbial red tape of Washington was cut, in the hope that proper appreciation may cause such practice to become more and more frequent.

There was critical need to house 1,000 employees on a war project. The Steamship "Berkshire" was anchored in the Hudson for the winter. In a few days she would be frozen in. Defense Housing Co-ordinator Palmer called Assistant Secretary of the Navy Forrestal on the 'phone: "We want to get this ship over to Hoboken. We think we shall have to use her to house workers. We don't know. Will you do the job?"

"Done," said Assistant Secretary, and the "Berkshire" was towed out that afternoon.

Morale building

RECENTLY graduates of Wellesley, Bryn Mawr, Pembroke and Sweet Briar Colleges held joint meetings in Washington to form so-called "discussion-groups," such as advocated by O.C.D. It was a little vague at first but turned out to be a plan to get college women active in group conversations. It got a nice big publicity shove by having Mrs. Roosevelt lead the first meeting. Then for two days, they broke up into sections of 15 or so and practiced "discussion" with the help of literature from the Department of Agriculture and the U. S. Bureau of Education.

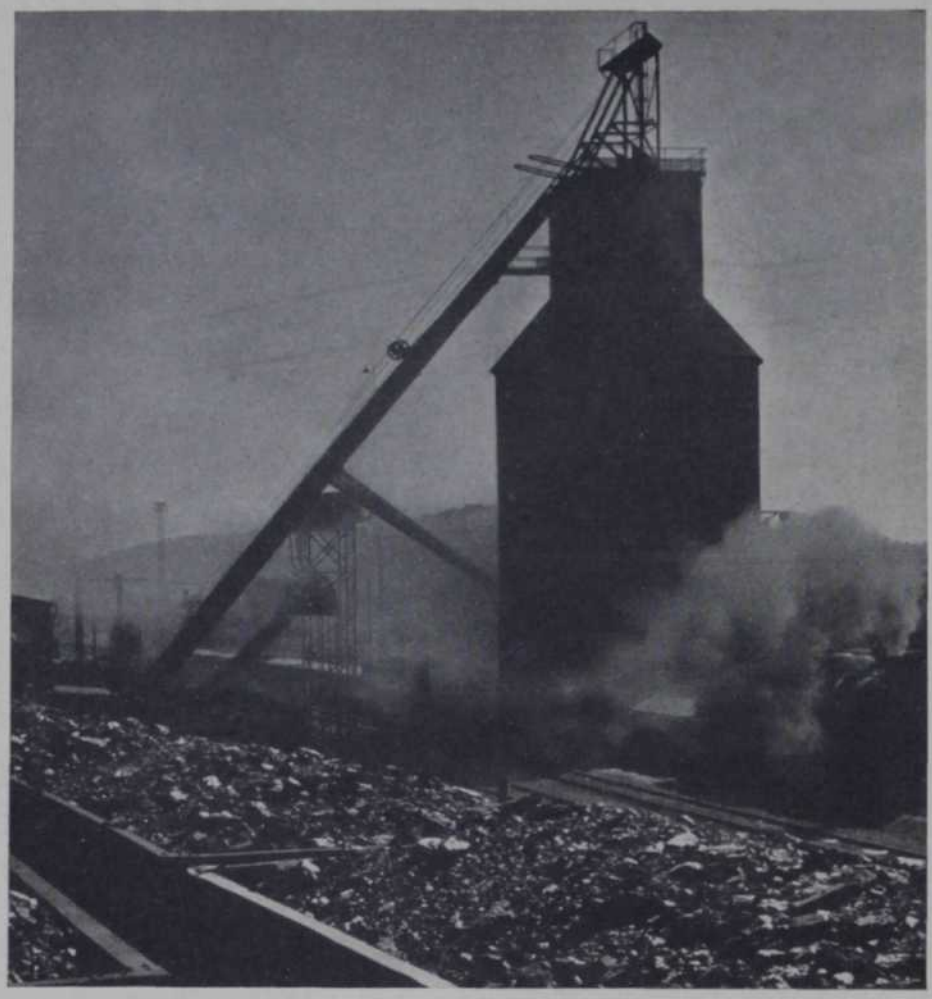
It's the literature we wanted to tell you about. Some one in each group agreed to pick up a supply and deliver it to her fellow discussers. One woman we know thought it would be handy to bring her supply in a carton. So she asked her grocer to send one over, though she didn't bother to say what it was for.

Know what she got? A box on which was printed, "Apple Sauce—White House Brand." Honest and true. We didn't make it up, and she's all right, too.

She told her group about it during a lull in a discussion. They didn't laugh. They smiled—wanly.

Clean out your morgue

TRYING to be cheerful and find the silver lining even in war's exigencies, we came across an exhortation by the



Now every lump in a carload bears a special delivery stamp!

● You can't see the stamp. But you *can* recognize the "special delivery" handling of the coal that rolls north, east, and west over Erie tracks these days. Coal to fire industry's all-out program . . . coal for civilian defense against winter . . . Erie hustles it through. One of America's oldest coal routes—one of its *fastest*—Erie dependability saves time and money for shipper and consignee. For any freight information—whatever it may be—call your Erie Agent.

ERIE RAILROAD

THE HEAVY DUTY RAILROAD

Bureau of Industrial Conservation of W.P.B. Save office filing space and salvage needed waste paper by cleaning out old files, was the substance of it.

There's an idea that office managers should welcome. The tonnage of musty old records in files is indeed enormous. But the question of their destruction raises a disquieting reflection. Will the Bureau of Industrial Conservation take the gaff when the Bureau of Internal Revenue wants to see our sales records for 1928? That is by no means an imaginary contingency. Other federal departments may send their agents around at any time, and we must be prepared for them. When the S.E.C. was building up its case against certain companies during the T.N.E.C. investigation it subpoenaed records back to 1906.

Stet (let it stand)

THE OTHER day the financial ticker noted that federal money borrowing of $1,500,000,000 would shortly be made available. But somehow three ciphers were added and the new loan appeared as $1,500,000,000,000. Scarcely anyone noticed the flight into trillions, not even in those federal offices where tickers have recently been installed.

Daniels in the N.L.R.B.

ELEVEN employees of a wine-packaging firm in New York City wanted to be unionized. They interested a union in winning for them a closed shop. Then, with the contract in the bag, the union leaders rejected their application for membership and placed other union members in their jobs.

After the lapse of a year this case came up recently before the National Labor Relations Board. The Board's trial examiner was shocked and declared that justice should be done. He directed the offending union to issue membership cards to the men permitting them to work at their trade once more.

Admirably judicial, you say. But wait. At the same time the trial examiner ordered the employer to put the 11 back to work, *and to pay them back wages for the whole year,* plus board, room and transportation, minus whatever they had earned at temporary employment elsewhere.

N.L.R.B. justice is a one-way street.

Common sense redivivat

THE MAYOR of Lynn, Mass., requested the Massachusetts Public Utilities Commission to investigate the New England Telephone and Telegraph Company, complaining that



LAUNCHED in 1797, the 40-gun frigate Constitution, better known as *Old Ironsides*, is the most famous ship in our Navy. Remembering her exploits in the War of 1812, it's hard to believe she's *still afloat* after more than a century. The *known* useful life of cast iron pipe is also more than a century—at least double the *estimated* life of other pipe used for water, gas or sewer mains. It has definite salvage or re-use value. And, through avoided costly replacements that would be necessary with shorter-lived pipe, cast iron pipe helps keep down local taxes. It is the only ferrous metal pipe, practicable for underground mains, which rust does not destroy.

CAST IRON PIPE
No. 1 Tax Saver



Unretouched photograph of *more*-than-century-old cast iron pipe still serving and saving taxes in St. Louis, Mo.

Pipe bearing this mark is cast iron pipe

Available in diameters from 1¼ to 84 inches.

CAST IRON PIPE RESEARCH ASS'N, T. F. WOLFE, RESEARCH ENGINEER, PEOPLES GAS BLDG., CHICAGO



Reykjavik off the port bow!

TONIGHT, somewhere at sea, a man stands on the bridge of a freighter with the life line of a nation in his hands.

He is straining his eyes for sight of one of those islands which are our country's first line of defense. To these islands must be transported huge quantities of munitions and food. And the only answer is ships, ships, and more ships.

How is America meeting this tremendous responsibility? You'll get a fair idea at such great factories as the Westinghouse plant where the machinery to drive many of those supply ships is being built, or at the huge Westinghouse-operated Maritime Commission plant which is now being erected alongside it.

The "know how" that works 24 hours a day

There, in these factories is a dramatic example of how Westinghouse "know how" is doing a job for National Defense.

What is this "know how"? It is the ability to get things done in the best possible way—learned in building products for the general welfare and now used in building materials for the common defense.

The same skill and ingenuity that are building those turbines for the merchant fleet, not long ago built more efficient electric refrigerators and washing machines. Again, the research skill that developed intricate new radio equipment has found ways of utilizing that equipment in important defense work.

At 17 Westinghouse Divisions, and in the plants of more than 300 sub-contractors, our energies are almost exclusively turned to the creation of $400,000,000 worth of defense materials. It's our way of speeding the day when our "know how" will be serving you again—in the home, the farm, and the factory.

Westinghouse

For the Common Defense

Armor-piercing shot
Seadrome lighting equipment for planes
Bomb fuses
Navy ship turbines and gears
Naval Ordnance
Airplane generators
Lighting equipment

For the General Welfare

Street Lighting
Electric Irons
Generators
Electric Refrigerators
Motors and Controls
Stokers

These lists mention only some of the many thousands of Westinghouse products.

WESTINGHOUSE ELECTRIC & MANUFACTURING CO., PITTSBURGH, PENNSYLVANIA

Copr. 1942, Westinghouse Electric & Manufacturing Co.

the rates were too high. The Commission declined, saying

1. Prior to the advent of war the company had expended "huge sums" of money "in a cooperational effort to make intelligently effective the plans of the U. S. government directed towards a successful and efficient conclusion of the war.
2. The energies and resources of the company are now being used to that end and its officials are devoting all their time to the job.
3. The company's earnings are not excessive. In 1940 they amounted to 6.2 per cent on plant less depreciation and it faced considerable increase in expenses and taxes. Already these are estimated to have increased over $5,000,000 in 1941 for labor and taxes alone, not including materials.

Summing up its position the Commission said

In our nation's present crisis, the company is commendably and capably serving in a capacity in the common endeavor. Moreover resources of the company are needed by the nation. It would not be in the public interest to intervene at this time.

To which we say, there is still hope for America and its free enterprise system.

Reveille in Washington—1942

YOU CAN'T do business with Washington in these times unless you have a large stock of patience and an acute sense of humor. Just how difficult it can be is related by Don B. Reagan, sales manager for the Heath Company, Benton Harbor, Mich., who journeyed to the capital seeking an arms contract for an aviation accessory.

At the War Department Mr. Reagan was informed by an information receptionist that he couldn't see his man without an appointment, although he had with him letters of introduction.

"How do I go about getting an appointment?" he asked. By phoning for it. Where were the phones? He would have to go outside the building somewhere and phone back.

One important call was to see an official of the War Production Board about priorities. This is Mr. Reagan's account of that interview:

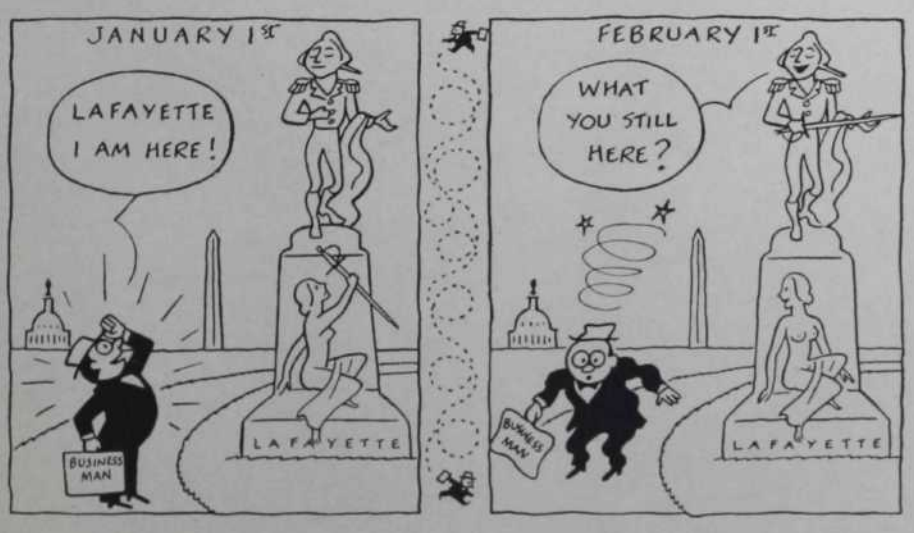
He referred me to his secretary and stated that he would 'isten to the conversation while he read his paper, and that if anything in the line of talk warranted it he would break in and give his advice. Evidently it didn't, so I talked with the secretary, who stated she would take up the matter later with her boss, then sitting ten feet away. Needless to say, our priorities matter was not settled at that conference. We are still waiting for a rating, having tried to conform to all rules and regulations.

Good neighbor ad absurdam

SOUTHERN cotton farmers are supporters of the "good neighbor policy," but object to unilateral good neighboring. A provision in the reciprocal trade agreement under negotiation would permit importation, duty free, of the entire Peruvian cotton crop of about 400,000 bales of long-staple cotton and supply a pressing shortage. Furthermore, under the most favored nations policy, other countries producing long-staple cotton could claim the same privilege.

Domestic long-staple cotton, produced almost exclusively in the Mississippi River Valley, amounts to about 500,000 bales. Objecting to the cotton provision in the proposed agreement, producers insist upon the privilege of supplying the country's long-staple cotton requirements. They point out that under the AAA their acreage allotment has been reduced 40 per cent. Besides, they argue, the Government is paying them thousands of dollars annually for not producing, or for what is better known as "soil conservation."

The Department of Agriculture has a different plan. It will not agree to increased acreage allotment, but will pay a premium on long-staple cotton to encourage diversion from short-staple, continue soil conservation payments on abandoned acreage—and get cotton from Peru.



HOW MUCH SHOULD YOUR EMPLOYES PAY FOR PERSONAL LOANS?

MANY of your employes have probably borrowed at some time from a small loan company. Do you know how much their loans have really cost? The dollar cost of personal loans, obtained from a reputable company, is substantially less than most executives think.

$100 loan costs $8.90

Suppose one of your employes gets a $50 loan from Household Finance. He may select, from a number of payment plans, one which fits his own income and situation. Say he chooses to repay in six monthly instalments of $9.08 each —a total of $54.48. The cost of his loan is just $4.48. He pays nothing more at any time. Or take a $100 loan, repaid in six monthly instalments of $18.15 each. The borrower repays $108.90. The loan thus costs $8.90. There is no other charge of any kind.

Prepayment reduces charges

Rates on small personal loans are necessarily higher than rates on large commercial loans. The borrower pays charges, however, only on his actual monthly balance. The sooner he repays, the less his loan costs. If a borrower finds himself able to repay ahead of schedule, he may do so at any time. He will reduce the cost of his loan in exact proportion to the extent of the prepayment.

At Household Finance wage earners can borrow $20 to $300 largely on character and earning ability. No endorser or guarantor is needed. Household thus puts within the reach of almost any responsible worker a quick, private source of cash credit for emergencies. The company maintains offices in leading cities of 24 states.

The table below shows some typical loan plans. Payments include all charges. Charges are made at the rate of 2½% per month (less in many territories on larger loans). Household's charges are below the maximum rates authorized by the Small Loan Laws of most states.

We would like to send you more information about Household Finance service without obligation. Please use the coupon.

WHAT BORROWER GETS ↓	WHAT BORROWER REPAYS MONTHLY				
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The home built upon a BALLOON



—a revolutionary use of Goodyear rubber speeds defense housing



Four-room home, built by "balloon" process, containing living room, two bedrooms, kitchen and bath

HERE you see an utterly new type of home construction, so rapid and inexpensive it promises a new era of expansion in American housing. It is a house literally built upon a balloon—an inflated rubber mold over which concrete is shot to form a fire-proof, termite-proof, earthquake-proof dwelling that ought to last for centuries.

A Los Angeles architect had the idea, but everyone said it couldn't be done — until he met the G.T.M. — Goodyear Technical Man. After studying the job the G.T.M. produced a semi-spherical balloon built of heavy two-ply rubberized tire fabric. To build, the balloon is laced down to a concrete foundation, inflated, covered with wire mesh and coated with "GUNITE" — liquid concrete sprayed on with a hose.

In twenty-four hours the concrete has set. The balloon is deflated and removed in five minutes—concrete doesn't adhere to rubber. Insulation and another layer of "GUNITE" are applied to the shell, making a permanent wall four inches thick. By repeating this process, a snug, warm and weather-tight home of four or more rooms can be quickly built.

So successful is this new construction, it is being considered for bomb shelters, powder magazines, cantonments, farm buildings and hangars as well as low-cost homes, as fast as Goodyear can design balloons of proper shape. Thus another new use of rubber can be credited to the ingenuity of Goodyear in working out a tough assignment. But handling concrete with rubber was no novelty to Goodyear, for long ago we developed a tough, abrasion-resisting hose for spraying concrete — the same type of hose used in building these "balloon" houses.

Let the G.T.M. help you speed production—with rubber

The Goodyear Technical Man is an expert in all industrial applications of rubber. To consult him, write Goodyear, Akron, Ohio or Los Angeles, California—or phone the nearest Goodyear Mechanical Rubber Goods Distributor.

GOODYEAR
MECHANICAL GOODS

Nation's Business
MARCH
1942

The Job is War, not Reform

WASHINGTON officialdom complains that the public does not realize that the nation is engaged in war. A critical war. An all-out war covering the land, air and sea of the entire globe. Washington chides the citizenry for its lethargy, its complacency.

Where does the blame, if any, lie?

From the country comes the retort that Washington is less in the war than the rest of the country. Superficially, this may not seem true. Communiques, appropriation of billions, speeches, exhortations to buy bonds, to improve morale, to sacrifice, to lick Hitler, to avenge Pearl Harbor. Plenty of surface excitement and resolve.

But underneath, what? The average man, as has been said, is a little above the average, and behind the flood of exhortation and admonition he sees or feels that his leaders in Washington are not taking the war seriously. He has become impervious to "emergency." He has been exposed for ten years to perpetual emotion. It is natural that he ask his leaders, today, for something more than words, something more than machinery "to build up his morale." He needs examples, actions, in high places.

As far as the citizen of Ellsworth, Kan., can see, not one of the 150-odd peace-time bureaus, boards, commissions and authorities has made any sacrifice. Not one. Rather, not a one but has found the war an excuse for expanding its personnel and "services."

The average citizen, therefore, has little sympathy for the inconveniences of a "congested Washington." In his dumb way he wonders why some of the 50,000 office-workers added during the past ten years might not sit at the same desks, live at the same homes, and temporarily carry on the war work. But no, the alleged social gains must not be lost; agencies from A.B.C., to X.Y.Z., must "not be crippled;" not even the 93 Federal housing activities can be consolidated. Even the removal from Washington of a small part of the greatly distended bureaucracy leaves the "complacent citizen" cold.

He hears on the radio an impassioned plea from the head of a war agency urging him to sacrifice necessities of life, and turns to read of the new gigantic, sprawling "settlement house" of Washington, furnishing him sociological surcease in the form of labor consultants, racial relations advisors, arts councils, square dance signal callers, rhythmic-dancing-for-tiny-tots exponents, and daily dozen exercise instructors.

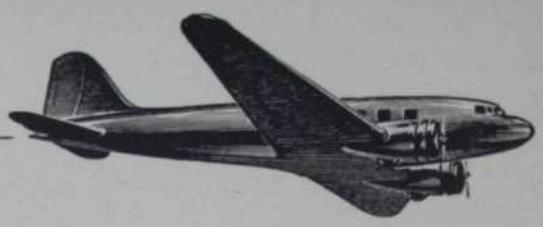
He settles back in his rocking-chair making a noise that sounds like "Ho hum."

And Washington is concerned because the country has not awakened to the rigors of a long and costly and hazardous war!

It is possible, if not probable, that the proud and profligate American republic may lose. It cannot lose if public sentiment forces Washington to clear its decks for action, to sweep off for the duration the tea-tables and other devices for discussions of schemes to make over America and human nature. Such a course would surely and quickly generate a confidence in our war effort that no additional billions could match in effectiveness.

Napoleon on the march, in one of his lightning campaigns, was slowed down by excess baggage. He gained speed—and success—as the result of one terse order: "*Ânes et savants en arrière!*" (Asses and brain-trusters to the rear!)

Merle Thorpe





VICTORY IS A QUESTION OF TIME

THE most vital battle today is a fight to gain *Time* in producing the many essentials of war.

For every hour *gained now* will hasten the hour of victory.

Every week *gained now* will spare the lives of thousands of fighting men.

Every month *gained now* will speed the return of peace and happiness to suffering men, women and children throughout the world.

From dawn to dawn, twenty-four hours each day, the nation's Airlines are *gaining Time* for the nation's war industries and Military forces.

They carry tons of essential parts and material at the greatest possible speed . . . to break bottlenecks and prevent factory tie-ups in every state.

They carry countless Army and Navy men, executives and technicians, tons of mail, blue prints and official orders thousands of miles beyond as well as within our borders . . . in *hours,* not days . . . to speed the tempo of production.

They make it possible for ordinary business to do its job with the speed and efficiency demanded of everyone in a nation at war.

By annihilating distance, the speed of Air Transportation creates for the United States and her Allies the key to an earlier victory . . . *Time* itself!

YOU can help speed Victory through buying Defense Bonds and Stamps. Invest your money now.

SAVE TIME BY AIR

For information on schedules, fares, etc., to any point on the domestic or international Airlines, ask any travel agent or airline office; or write: AIR TRANSPORT ASSOCIATION, 1515 Massachusetts Ave. N.W., Washington, D. C.

That They May KEEP FLYING

By PAUL McCREA

IN A WORLD now driven frantic by the need of "controlling the air," it seems impossible that people not yet grandparents can remember seeing Aviator Philip Parmalee amuse county fair crowds by dropping oranges at a sheet in front of the grandstand to demonstrate how airplanes might bomb cities in war.

Nobody believed him then.

"No disappointments—the airplane flies," was a common footnote to handbills announcing such flights, and the rickety boxkite from which the demonstration was made seemed dangerous only to him who dared take it off the ground.



BLACK STAR

Even the World War and the years that followed did not wholly erase our scepticism. Most of us felt that any one who urged national reliance on air power was a madman. Some justice then in the circumstance that a madman did put his reliance on air power and terrified the world.

Now we want thousands of airplanes, 125,000 next year, to be exact.

Members of the House Military Affairs Committee who investigated the aviation industry say we will get them. Moreover, they will be good planes, "the equal to those in production elsewhere" and:

"In certain categories, particularly heavy bombers, we unquestionably lead the world."

That seems almost incredible. Consider that our enemies have spent years developing airplane types, technique and production for military purposes. In Germany, planes presumably built for peaceful purposes have long been designed with a view toward quick adaptability for use in warfare. Meanwhile, we, as a nation, have paid little attention either to airplanes or war. What kind of magic is this by which we equal and sometimes surpass them?

Let's see if we can find an answer to that question.

1 ★ The Good Old Days

Union County boy makes good. Semi-gods—or fools. Villa laughs at planes. Oranges were bombs. Salute with a revolver. 20,000 aviators, 14,000 planes. The airplane was simply a weapon. Planes by submarine. $125,000,000 profit—$180,000,000 for improvements.

ON NOV. 27, 1910, the Creston, Iowa, *Morning American* enlightened its readers thus:

"A former Union County boy is winning fame



For years airplanes were made of spruce and Irish linen, put together by hand by skilled workers

among the aviators. His name is Glenn L. Martin and he is now 24 years of age."

The Creston burghers were probably not unanimous in the opinion that this item belonged in the "local-boy-makes-good" category.

Although the Wright Brothers had demonstrated the possibilities of heavier-than-air flight seven years before, most of the populace was too busy controlling horses inspired to a white-eyed cake-walk by the new-fangled automobile to pay much attention to what went on overhead.

Toni Stadlman, who started building airplanes in 1910 and is still making them for North American, remembers those early days:

"Half the people thought we were semi-gods—the other half thought we were just plain fools."

Two years later, when Lawrence D. Bell—now president and general manager of Bell Aircraft Corporation—went to work for Martin, the Los Angeles telephone book listed aviation enterprises under "amusements."

According to general opinion they still belonged there when World War I began. True, the Army had become interested in aviation as early as 1908 when it advertised for bids on airplanes that would fly 40 miles an hour and stay in the air 60 minutes. But there were few who would agree with Mr. Martin when he declared, in August, 1914:

> The aeroplane will practically decide the war in Europe. They will smash armies, wreck mammoth battleships and one man driving an aeroplane laden with high explosives can dive like a plummet upon a great warship and destroy it. For the old time war tactics are no more.

Those who had witnessed the erratic trajectory of Pilot Parmalee's juicy projectiles may be pardoned for doubting that. So may those who remembered that General Pershing had taken an aviation corps to the Mexican border where it joined the search for Villa with disillusioning results. It was some little time before the aviators themselves became acquainted with their lethal possibilities.

Knights without arms

Used mostly for reconnaissance, they flew over the World War battle lines, waved fraternal greetings to enemy pilots similarly engaged and returned to make reports.

This happy camaraderie ended abruptly when one bad-humored flier returned a rival's friendly salute with a fusillade of revolver shots. He missed, of course, but his astonished target was so thoroughly annoyed that, on his next trip, he carried a shotgun.

Aerial warfare had begun.

Although its World War practitioners never brought it to the heights that Mr. Martin had predicted, they did give the aviation industry a terrific—almost brutal—boost.

When we entered the first World War this country had, perhaps, 40 flying instructors and ten qualified airplane designers. According to Henry Ladd Smith's commercial aviation history, *Airways*, we came out of it with:

1. Forty-eight large training fields, where formerly there were only two.
2. More than 20,000 trained aviation officers, where formerly there had been only 55.
3. More than 175,000 men trained as mechanics and ground force, where there had been 1,300.
4. A production line that started at a rate of 224 planes a year and ended with a rate of 17,000 (some sources say 21,000).
5. Adequate substitutes for castor oil (hitherto the only reliable lubricant), Irish linen wing covering. (Silk, used for

this purpose in private flying, developed runs like those in silk stockings when pierced by a bullet.)

6. The finest aviation motor produced up to that time.

To do all that we actually spent $617,000,000 out of a $2,000,000,000 appropriation—and we got $20,000,000 of our expenditure back through sales of material after the Armistice.

In 18 excited months, we built 14,000 planes. Of these, aviation companies were responsible for 10,000; auto companies for 2,000. Miscellaneous builders turned out the others. Although most of these were Curtiss "Jennies"—training planes, of blessed memory—a fair share were De Haviland bombers. We shipped 1,213 of these overseas and 499 of them reached the front before the Armistice.

By any modern measurement, that isn't much of an effort. A good primary trainer today would probably spank the flippers off the best ship we—or anybody—put in the air in those days.

The average World War plane was a single engine biplane, 350 horsepower, with a speed of 70 to 100 miles an hour. Bombers managed eight 50 pound bombs under their wings.

Three modern bombers will carry a greater tonnage of bombs than the Germans dropped on England in the whole World War.

That would have been small comfort to those who were dodging World War bombs even if they could have foreseen it. A person who is huddling in a subway is not given to rejoicing at the advancement of the art that sent him there.

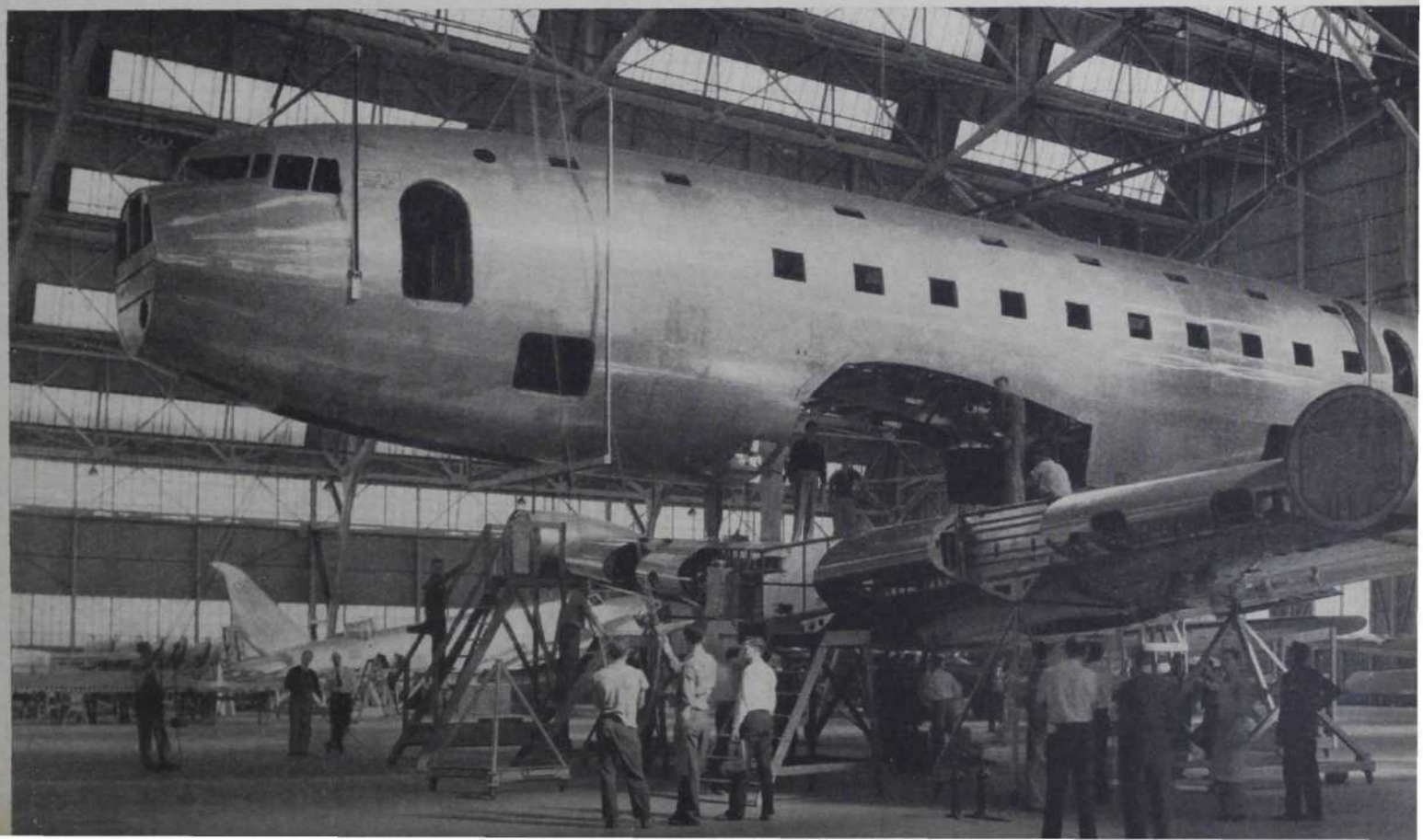
The war was not an unmixed blessing for aviation. Although it spurred the science of aerodynamics into a gallop, it fixed the airplane, in the public mind, as a steed with which the Guynemers, the Bishops and the Rickenbackers rode to gallant but inexplicable tilts.

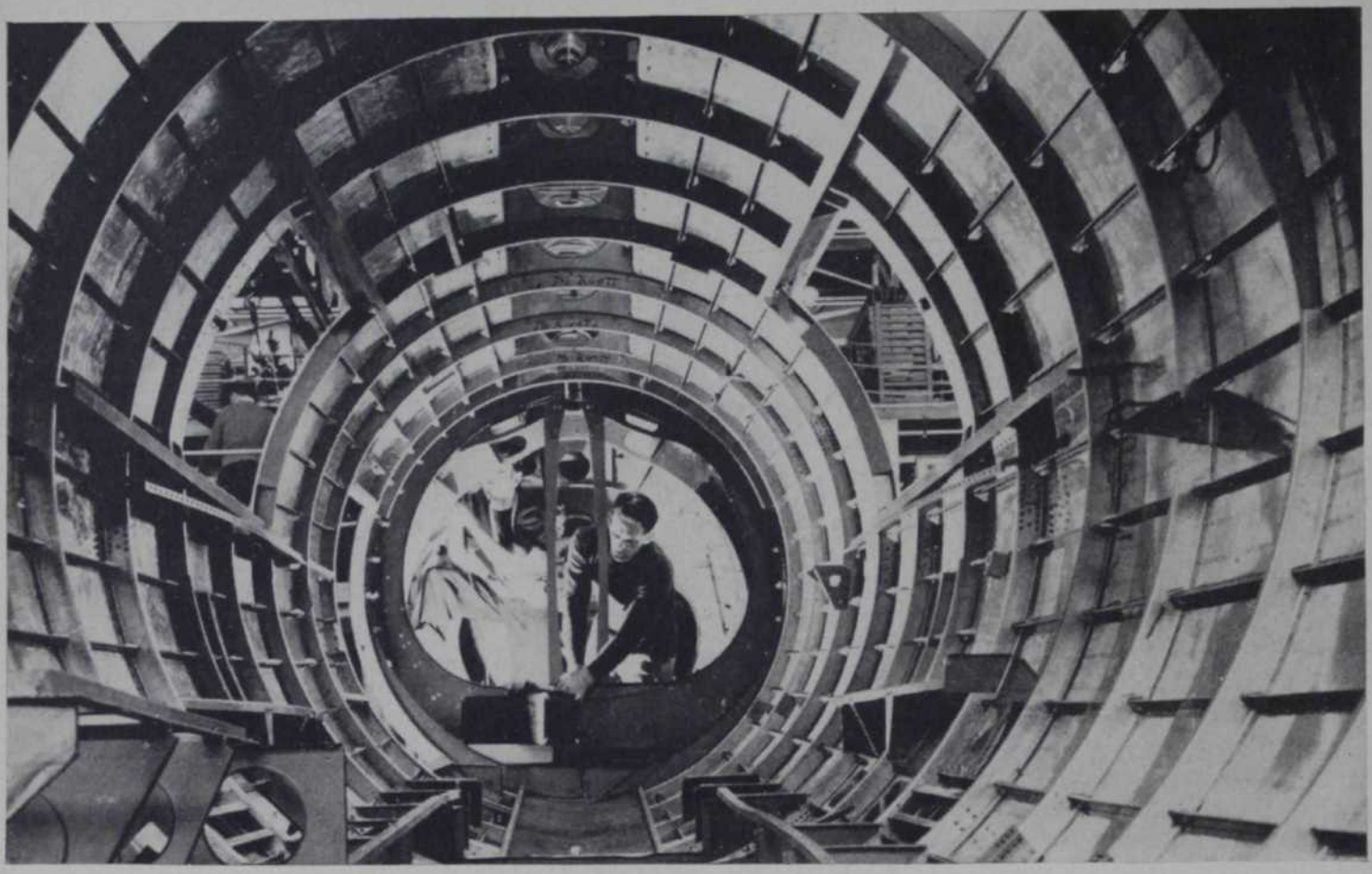
Peace found the world ready to lay down its weapons and the airplane was simply a weapon.

In this country, $100,000,000 worth of military aviation contracts were cancelled within two weeks of the Armistice. In a matter of months, the industry was down to ten per cent of its war-time size. As late as 1924, the country's entire aviation plant had a net worth of less than $7,000,000.

In spite of this aerial catalepsy, a few men were not discouraged. Among them were the pioneers. They were used to public disinterest. But now their ranks were swelled by a horde of war-trained birdmen for whom the thin cloud miles held an irresistible urge. Buying up government planes, they roamed the land carrying passengers out of extemporized landing fields, passing the hat among Sunday traffic at crossroads, skywriting, dusting crops, doing anything by which an aviator might earn the few dollars needed to keep a

"Subassemblies" meet in a modern plant. Bigger, of awkward shapes, plane parts were real challenge to mass production experts





Interior view shows the size of the modern Boeing B-17E Flying Fortress. World War I bombers carried eight bombs under wings

Curtiss Jenny in the air. Such tools as they needed, they carried with them. They were their own mechanics. Plane inspection was accomplished by grabbing a wing and shaking the thing violently. If nothing important fell off, she would fly. If nothing fell off whatever, she was safe for stunting.

It was a precarious existence, but those who lived through it learned a lot that is serving the country well today.

Plane builders also kept their hands in although customers were few and peace had seemed to end the need for many experiments which were nearing completion at the Armistice. Another year of war might have seen the use of parachute troops. The Germans were considering such a possibility as a way of breaking the deadlock on the western front. With peace, German officers went to Russia and taught the trick to them.

They were also dallying with the possibilities of carrying planes by submarine and launching them off our coasts.

In this country, by 1919, Martin was working on a self-sealing gas tank and plans for putting cannon in airplanes were taking shape. Armor for planes was not far behind. War-time pilots engaged in ground-strafing or hedge-hopping had shown the need for that. Frequently they put a piece of armor plate in the seat. It was not comfortable but it might prevent an embarrassing wound.

Men interested in such things did not stop merely because the public had lost interest and Army and Navy appropriations for aviation—as for everything else—had been so severely curtailed that, by January, 1934, the Army had only 1,800 planes—650 of them combat ships—and the Navy 1,000.

Proof of the builders' persistence is found in the fact that, when somebody finally got around to ask for a bullet-proof gas tank, the first was delivered in 30 days. By that time Martin had tried out 285 different combinations.

The builders' ranks were augmented in strange ways and in unexpected places. In 1922 E. M. Laird got word that an oil gusher had come in on inaccessible property he owned in Oklahoma. He hired a former barnstormer to fly him there.

Arriving, he remarked, "That's quite a thing—that airplane," and forthwith built a factory to produce the "Laird Swallow." By some accounts this was the first factory ever built to make planes for commercial use.

In Indianapolis, the Allison Speedway Team Company, a 20 man shop, was set up in 1915 to service the racing cars owned by James A. Allison, a founder of the Indianapolis Speedway. World War orders for tools, engines and tanks expanded it to 250 employees and changed the name to the Allison Experimental Company. In 1927 the company was asked to rebuild 2,000 Liberty motors in an effort to increase their horsepower from 400 to 570.

The Liberty was a war-time, water-cooled, V-12 motor. By 1927 most aviation engineers had turned their attention to air-cooled motors for flying. But the possibilities of liquid cooling interested Mr. Allison and Norman H. Gilman, his shop superintendent. Such a power plant would have obvious advantages for some types of planes. The Allison plant was full of precisionists who solved mechanical puzzles as a hobby.

"Maybe we'd learn something"

They went to work on a liquid-cooled aviation motor weighing one pound per horsepower. The Liberty weighed five pounds per horsepower. When Mr. Allison died in 1928 and General Motors took over the plant, the work went on with The General Motors Research Laboratories taking a hand.

"Nobody knew what might come out of it," one General Motors man says. "Maybe nothing. Maybe something we could use in making automobiles."

The first thing that came out was better bearings. Bearings had been a weak point in the Liberty. Next came glycol ethylene as a coolant. Base chemical of Prestone, the stuff pumps six times as fast as water, permits a smaller radiator, smaller cooling surfaces, hence a lighter motor with better streamlining.

By 1932, an Allison engine of 750 horsepower passed a development test. The Navy was sufficiently interested to order 22 of them for lighter-than-air ships. Only two of these were shipped before the *Akron* and *Macon* crashed and the Navy abandoned lighter-than-air.

But the work went on. In 1935, an Allison engine hit 1,000 horsepower. It weighed little more than 1,000 pounds. If that advance sounds easy, it is because we've no time to labor details; to tell of the vibrations that twisted off crankshafts, cracked crankcases, burned out valves, bearings that failed; of the time when every part of the engine, except the connecting rod, was redesigned in three months. The men involved did not regard these things as discouragements.

"We were trying to learn about motors."

They learned so well that, when the Army got ready for liquid-cooled motors in May, 1939, the company was ready to start building a mass production factory. The goal of peak production was reached in December, 1941, two weeks ahead of schedule.

That desire to "see what we could learn" was typical of the whole aviation industry. It kept men experimenting, improving, sometimes dying, throughout the lean years when the country, as a rule, cared very little whether they learned anything or not. They were, in fact, learning plenty. That was demonstrated in 1927 so spectacularly that the people turned air-minded overnight.

In that year Lindbergh flew the Atlantic. In the next, applications for pilot's licenses jumped from 1,800 to 5,500 a year; mechanic's licenses from 1,600 to 5,000; licensed planes from 1,100 to 4,700.

Business executives traveled in private planes which they bought themselves or got their companies to buy for them. Cities built airports. Aviation was here to stay—until 1929. Then business men grounded their planes, many cities plowed up their new airports, the market for all kinds of airplanes seemed totally extinct.

So Walter H. Beech opened a new factory.

Mr. Beech had made his first solo flight in 1914,



"DICK" WHITTINGTON

"Hot coffee on the house" helped Aircraft Accessories Corp. boost output 600 per cent

served with the Army Air Corps in the World War and, in 1922, had joined the Swallow Airplane Company as salesman and test pilot.

By 1932, when men were still jumping off high buildings to escape the wolf at the door, he was vice president in charge of sales for Curtiss-Wright in New York, a job earned by achievements in blind flying, plane design, and cross country racing. Starting on his own, he devoted two years to experimental and development work before putting the first Beechcraft on the market.

All right, Mr. Price, we won't tell how big that company is today but it has produced seven kinds of planes for the Army and Navy.

A nation in peril should find surcease of fear in that story. It should take comfort in remembering how Donald Wills Douglas walked the streets of Los Angeles in the '20's ignoring friends' advice to "Forget aviation. Get into something useful."

He had a dime in his pocket, a roll of blueprints under his arm and an urge to build airplanes in his heart. He needed financial backing. Fortunately, after several shabby months, he found it.

Today the Douglas plant—but the censor won't let us talk about that.

Or we can take assurance from the story of how Larry Bell—who learned to fly with Lincoln Beachey—rang doorbells in Buffalo in an effort to sell interest in the Bell Aircraft factory which, at the time, was an empty building with no machinery except the ventilating fans.

These men, and others like them, insisted on building better airplanes even when the general public didn't care much one way or the other. For those who insist on figures, that eagerness can be demonstrated mathematically:

From 1934 through 1940, the 18 largest companies, which comprise 90 per cent of the industry, had a profit of $125,000,000 after paying taxes. In that same period, they spent $86,000,000 for engineering development and $94,000,000 for plant improvements.

In the face of that record, it seems hard to believe that, if effort, ingenuity and aerodynamic knowledge can save us, the aviation industry will let us down now.

Martin's tool room built a rivet sorter, made salvage easier, freed several workers for other tasks



2 ★ From Blueprints to Bombing

A spade in a prairie. A Cabinet member avoids drowning. Plane parts are awkward shapes. Assembly lines 850 feet long. They borrowed from shipbuilders. A camera 34 feet long. A girl from a bottle factory. Nail driving is victory game. Engineers snort and paw the earth

ON A CERTAIN day, J. H. Kindelberger dug a spade into prairie that hadn't been disturbed since the Alamo. Mr. Kindelberger—most people call him "Dutch"—is not a handy man with a spade. Graduate of Carnegie Tech, he became a World War aviator, has been designing and flying airplanes ever since. But North American Aviation, Inc., was building a new plant and ceremonies called for its president to turn the first spadeful of earth. So Mr. Kindelberger dug.

One hundred and twenty days later a $9,000,000 airplane plant bloomed above the scene of his digging. In it young men—95 per cent of them with no previous experience in aircraft work—labored so diligently that 50 training planes were delivered to the Army in a single day.

North American is not unduly excited about this.

"Mass production of military airplanes has been a reality with North American since the inception of the organization."

Because of this, the company was able to deliver an airplane to the Army 30 days after its defense contract was signed and the first "Mustang" fighter practically "flew off the blueprints." It was completed for Great Britain just 100 days after the first sketch for the plane was drawn.

That kind of speed would be remarkable in any industry. It is the more astounding because aviation had never gone in for mass production. It didn't need to:

"North American alone could handle the entire business the aviation industry did less than a decade ago."

In that decade, 1,000 planes a year was a big production. They were custom-built jobs, turned out by master craftsmen, a production technique which would have been suicidal in wartime. Some people knew that. Through the years when the opinion of air power was so low that a Cabinet member volunteered to stand on the quarter-deck of a target ship used in an aerial bombing demonstration (and escaped a wetting because he didn't) considerable long range planning went on.

The aviation industry and the War and Navy Departments were ready to heed Glenn Martin's 1914 prophecy. Orders from France and England, even before the start of World War II, gave the companies opportunity to develop quantity production methods, educate subcontractors, train workers.

"Today," says Lawrence Bell, "all of us have developed methods of high speed production and assembly."

That job took ingenuity because mass production methods as worked out by other industries simply would not fit airplane needs. Compared even to an automobile, the airplane is a complicated machine—there are 2,500 parts in a four-door sedan, 9,000 in a fighter plane.

"Moreover," Boeing Aircraft Company points out, "the auto industry uses sheet steel, an easily worked metal. The airplane industry is working with aluminum alloys and stainless steel. Further, airplane parts must be formed accurately and with infinitely finer tolerances."

Also they are frequently larger and of awkward shapes.

New methods—new factories

Sometimes old methods or machines could be adapted to handle them. Generally they had to be specially built. Occasionally they had to do something that had never been done before as at one plant where design of a certain assembly job required two rivets to be inserted next to each other. This bottleneck was finally broken with a special riveting machine that drove both rivets at once.

Many companies found that factories which were efficient in the days when skilled workmen stood in one place and built a plane from the ground up could not be used under conditions which demanded assembly



Women have not only proved their efficiency, they make men work harder to maintain own prestige

lines up to 850 feet long—as they are in the Vega plant. New factories were the only answer.

They were built. So many of them that today Curtiss-Wright alone occupies more floor space than the whole industry occupied two years ago.

Before any of this could be done, plane builders had to sit down with government procurement agencies and get answers to the questions, "What do you want?" "When do you want it?" "Will you give us the tools?"

Having got the answers, they went to work. First step was the mechanized assembly line. In some accounts, Vultee Aircraft, Inc.—now joined with Consolidated—was the first to get this into practical operation. Using techniques similar to automobile methods, this company boosted production 400 per cent with a scheme by which major assemblies, such as wings and empennage sections feed into a final assembly line.

At Boeing, where the Flying Fortress was formerly built as a complete assembly in one job, a tool-design department, started in August, 1940, worked out a system by which the fuselage is broken up into three main sections which in turn are combinations for many smaller sections. This not only permits many more men to work at the same time but makes more efficient use of the same space.

Other companies have similar installations. To them, they have added "lofting," borrowed from the shipbuilders.

Stated in simplest terms, lofting means making full-scale patterns of parts—similar to the patterns a tailor makes for a dress or suit. These patterns are used as guides in making parts which, after being cut, are shaped by hydraulic presses or steam hammers. The largest of these presses at Boeing weighs 5,000 tons, turns out four parts per minute. Drop hammers, formerly used, averaged 30 minutes for one.

To lofting the industry added "drafting by camera," a process by which engineering drawings are transferred in exact scale to metal, wood, or almost any material.

At Lockheed Aircraft Corporation, equipment for this process includes a combination camera and projector 34 feet in length with one of the largest photographic lenses ever made, and a special camera standing 10½ feet high, looking more like an oil derrick than photographic equipment.

The derrick is used to photograph the engineer's drawing, as many prints as may be needed. The big camera-projector then blows these up to actual size and photographs them on sensitized metal which becomes the final template or pattern.

Explaining the advantages of this method, the company says:

"In the past, each template had to be laid out manually, entailing considerable loss of time as well as man hours. The main function of the new system is to eliminate this manual duplication of effort which has been quite a hold-up between the time the engineering information was released to the plant and the time that tools and finished parts were being fabricated."

The Martin plant, where a similar system is used, reports that it "saved the company more than $80,000 last year in drafting alone. Engineering work is speeded tremendously."

All time-saving innovations were not so complicated. They include everything from a rivet sorting machine developed by Martin's Tool Design department, to use of a bottle labeling machine suggested by a woman worker at Vultee.

A woman with ideas

The woman, formerly employed by a bottle company, went to work at Vultee laying out rubber strips and painting glue on them with a brush. She thought the bottle labeling machine of her former employer could do the work faster. It could. Now handling time is saved and the glue is distributed more evenly.

At Republic Aviation Corporation, head sets such as telephone operators use have improved teamwork on the assembly line. Formerly a worker inside the fuselage had to crawl to the nearest opening if he had any instructions for those working with him on the outside. Now he has instantaneous communication and no one's work is interrupted.

At Taylorcraft Aviation Corporation, in spite of an ingenious assembly line which speeded wing production 25 to 30 per cent, efforts were still handicapped because plywood, used on the leading edge, insisted on warping when bent around a steampipe. A woodworking foreman solved that by wetting only the center of the wood before bending.

Making a game of work

At Fleetwing, a corps of special assignment men devote all their time to ferreting out opportunities for improvements. They have turned out scores of small ingenious tools such as rivet punches and rivet cutters that make for faster production. Meanwhile, a hydraulic rubber press adapted to the job of forming stainless steel ribs turns out 15 ribs in a fraction of the time formerly employed.

At Piper Aircraft Corporation: "We mix our paints in drums containing 300 gallons," says W. T. Piper, "and it is blown from a central point to the various dope rooms. We make our acetylene in big converters and have a cascade system for our oxygen by which several hundred drums are piped together. Both acetylene and oxygen are then piped to the welders' benches."

Even where machines couldn't help them, companies and workers found speed-up methods.

At Aeronca Aircraft Corporation, a group of workers turned the monotonous chore of driving nails into a victory game.

In one operation it was necessary to lay a covering material over the ribs and spars of an airfoil and tack it down securely. The six men so engaged soon found that each had to drive the same number of nails to complete his section. They made a race of it. At a signal everybody starts. The last one finished buys "cokes" for the others.

Enterprise, however, was not confined to the factory. It started in the drafting room. Not long ago, shop men were known to snort and paw the earth when new blueprints arrived.

"Look at this part! The engineers have designed it so that we have to use a left-handed monkey wrench to assemble it. Now, if I was planning this plane. . . ."

The engineers were not entirely to blame. They were up against exacting and constantly changing demands of a comparatively few customers. No contract was

large enough to support the high cost of quantity production tools and methods, and, as Republic Aviation Corporation explains:

"A good engineer who designs an airplane which will be produced on contracts calling for a dozen or a score is by no means as production-minded as one who is designing an airplane which he knows will be produced in hundreds or thousands of units."

They offer in evidence their own P-34 Lancer designed two years ago and the P-47 Thunderbolt designed in 1942 to meet the war need.

"Although the Thunderbolt weighs twice as much as the Lancer, is apparently twice as complicated, carries armament, supercharging equipment, armor and many other advanced devices to give performance far exceeding that of the Lancer, the Thunderbolt is much easier to build."

It was designed from the beginning for mass production. Standard sizes are used, service problems simplified, assembly points made more accessible, this sort of thing:

Aircraft tubing resembles a spaghetti manufacturer's nightmare. It carries fuel oil, air pressure, electrical wiring through the tightly packed quarters of a pursuit plane fuselage and bending it is one of the trickiest and most laborious processes in aircraft manufacture. A Lancer requires approximately 300 pieces of tubing in which 800 bends are made. The Thunderbolt is designed to use 200 pieces with approximately 600 bends.

Even so, the search for better methods goes on. Martin has a staff of 300 engaged in a "work simplification program." Their job is to look critically at every machine, every operation, every step and arm motion by a workman, planning something better.

Beards for defense

Boeing has a group called "expeditors." When an engineer finds what looks like an awkward production direction or spots what might be a short cut, the expeditor takes the idea to the designer. If the change can be made, it is. If for some reason, it can't, he explains to the engineer. Recently the expediting group swore a solemn oath not to shave until the B-17E was an actual, flyable plane. They were out of the bush in three weeks.

Without this passion for simplification, the industry not only could not have built planes quickly—it probably could not have built them at all. There simply weren't enough trained workers to build them by the methods that were common before the war.

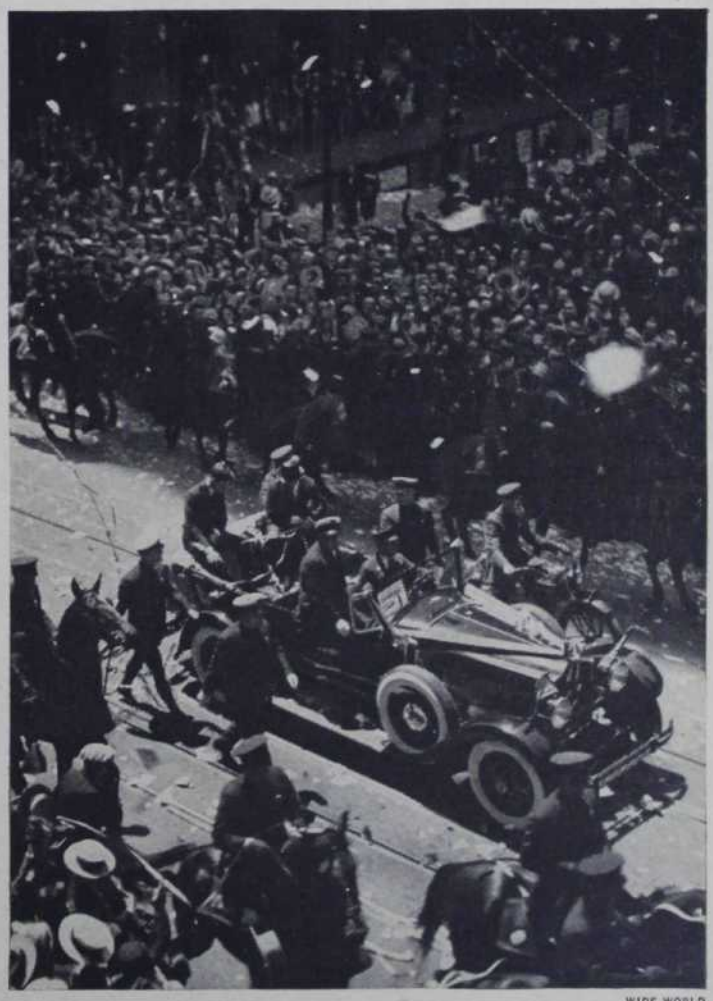
Col. John H. Jouett, President, the Aeronautical Chamber of Commerce of America, has estimated the labor need:

"From about 400,000 at present in our own industry, the entire program demands an increase to more than 700,000 within the next few months and upward of 2,000,000—including the motor car people—to produce 125,000 planes next year."

Foreseeing that need, the companies have been carrying on training programs since the first orders began arriving from Europe.

As long ago as December 16, 1940, workmen moved into the cattle exhibit shed on the Ohio State Fair grounds, tore out the stalls where blue ribbon winners had once chewed peaceful cuds, and began moving in machinery. Curtiss-Wright was setting up a school for aircraft workers. Construction of the factory where they were to practice their new knowledge had not yet begun.

"While Government educational projects have done much in pre-employment training of mechanics," says Colonel Jouett, "our companies have trained tens of thousands at their own expense, paying new employees



WIDE WORLD

Lindbergh's flight suddenly made the whole country air-minded. Then came depression

during the learning period. This has lightened the burden of expansion as much as any one thing."

The learners have not all been men. In most plants the girls are already demonstrating that, in addition to being "Deadlier than the male" they are also handier. Everyone seems to agree that they excel in work requiring care and constant alertness. Apparently they can hold their own elsewhere too.

Vultee, which claims the distinction of being the first to employ women throughout the factory—working at welding, riveting, painting, final assembly and with sheet metal—was 83 per cent ahead of contract schedule last May.

At Cessna, where girls had proved immensely successful in the wood-working, instrument board assembly, and sheet metal divisions, a few were finally moved into the "hammer house."

That was done with misgivings. The hammer house is about the most indelicate department in the plant, filled with the din of hydraulic presses, high speed trip hammers and other noisy equipment.

The girls went to work alongside the men, operating stamping machines. Production began to climb.

"Not only do the girls maintain a high standard of production for themselves; they set up an automatic competition with the men who will not let themselves be outdone by feminine workers."

Such records account for the enthusiasm of many aircraft builders who believe that, when the peak is reached, the industry will employ as high as 70 per cent women workers. Others set the figure at 50 per cent which is about what it is in England today.

"And," say the enthusiasts, "there is reason to believe that the women will find, not only an opportunity for helping the defense program, but will also find opportunity for a permanent future, pleasant working conditions, reasonable hours and good pay such as has hitherto not been available."

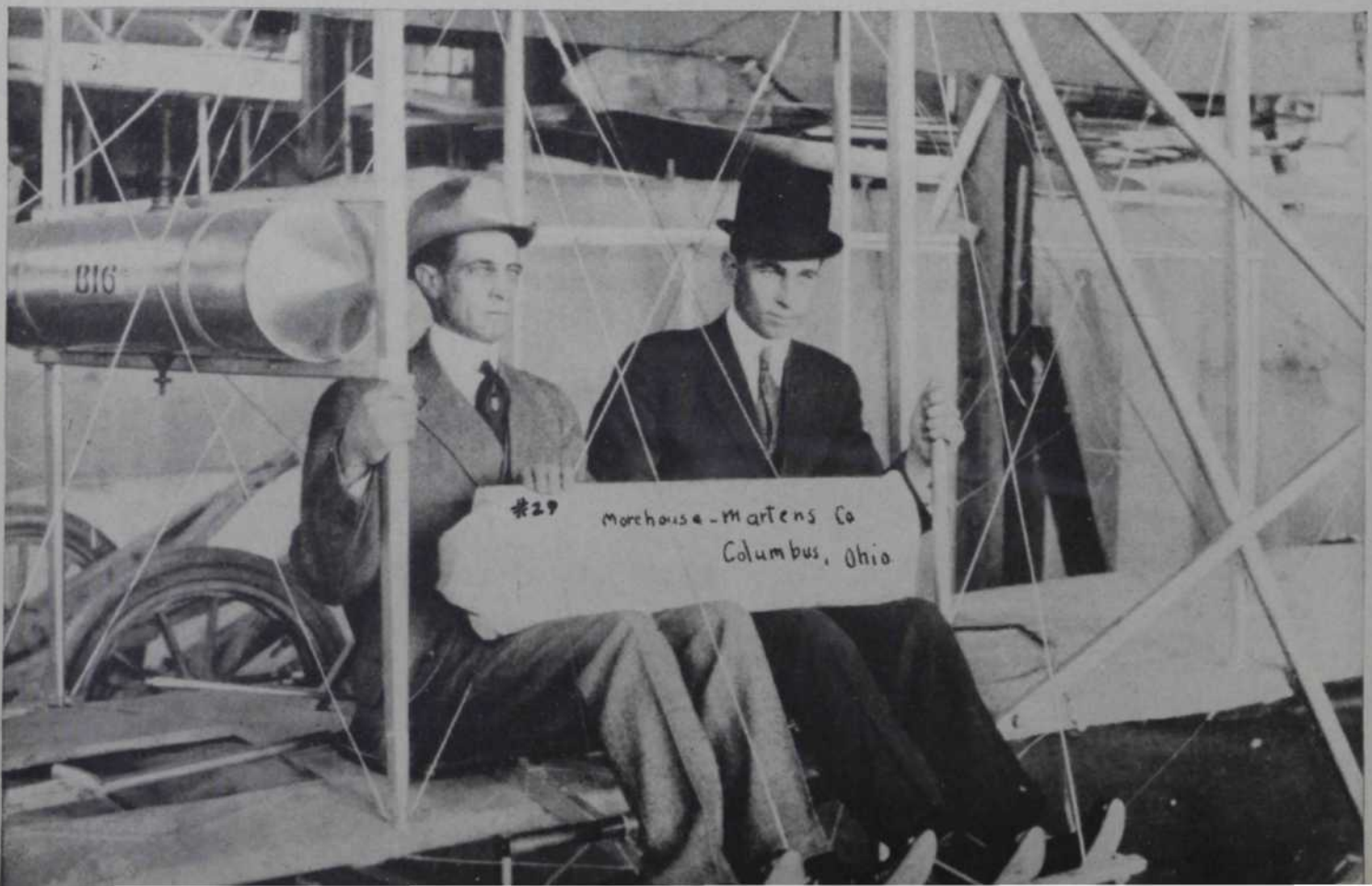
The girls seem to think so, too. When the Swallow Airplane Company announced training classes for women workers, the early enrollees included a former school teacher and a girl with three college degrees who had formerly been assistant dean of women in a middle western college.

But, while the girls were solving one problem, they created others. Major executives of one company sat in perplexed conference for hours.

"We are going to employ women," the chairman said, "but the factory was built for men only. Where can we put the rest rooms?"

A snicker or two greeted that but there was no humor in the debate that followed.

First air express shipment. Pilot Parmalee (in derby) and Mr. Morehouse delivered silk from Dayton to Columbus in 1910



"I tell you, if you move the stock room, you'll slow down the assembly line."

"Good lord, does plumbing cost that much?"

3 ★ No Priority on Brains

Sunday after Sunday. Stretching bolts .008 of an inch. One machine instead of 39. An aptitude for things mechanical. A discarded grease gun. "Shall we learn to read backwards?" The British said it "fluttered." They must know where they're going. "We sweat for seven months."

THE PLANTS building motors to power the new planes have been equally adroit.

Sunday after Sunday, a little more than a year ago, a small group of Wright Aeronautical Corporation employees stood around 20 benches on which were distributed the parts of the Cyclone engine. They were trying to devise a successful method for putting those complex power plants on a production line.

It had never been done. In the past a crew of four men had worked eight hours to put a single engine together—and those men were experts. They tightened the nut on a crankshaft bolt, for example, until the bolt stretched exactly .008 of an inch. No more, no less. Could a production line give that kind of accuracy?

Sunday after Sunday they revamped, re-timed, altered the line. Eventually they got it.

The production line is used through the plant now, thanks to a battery of special machines. One of them, more than 150 feet long, took nearly a year to design and build, but it would take 39 old type machines and 39 skilled operators to turn out as many cylinder heads as it does.

Similar methods have enabled Pratt & Whitney—where 30,000 men work around the clock seven days a week—to set peak loads and pass them so often that technical men no longer talk about the day when the plant will reach capacity production. In spite of this hot pace, the plant finds time to reclaim 1,000 tools a month to conserve steel, and the workers—many live as far as 50 miles from the factory—include men to whom one one-thousandth of an inch was merely a figure of speech a few months ago.

Conservation of raw materials may be needed but the country has one resource that is serving it well:

"A majority of the young men in this country have an aptitude for things mechanical," says F. C. Kroeger, general manager of Allison. "Of our present production force, approximately 70 per cent were hired as trainees with no related skill, 20 per cent were semi-skilled and only ten per cent were skilled for the job. Yet, in less than two years, eight members of the "unskilled" group have become foremen; 37, set-up men; 47, group leaders."

As D. L. Wallace of Cessna says: "There is no priority on brains."

Neither, apparently, is there unwillingness to use them.

At Vultee certain parts had threads or small gears which used to be covered with masking tape for protection when the part went to the paint shop. Then a workman designed a small wooden jig into which the pieces might be fitted before the paint was sprayed on. Parts needing protection extended outside the jig. That saved two operations—masking and unmasking the rods. It also saved masking tape.

At Allison, J. O. Brittain combined a discarded grease gun and an air gun into a pneumatic spring compressor that cut out so many operations that assembly time for valve springs was cut in half. Working with scrap iron, a gauge and a couple of solenoids, Virgil Eder fashioned a contrivance that increased valve keeper spring inspection from 300 to 1,000 an hour.

This aptitude for machinery, coupled with an eagerness to do the job well and then do it better, has enabled many companies not previously connected with aviation to contribute to our drive for air control.

Blueprints in reverse

Packard engineers gathered around an enormous bundle of blueprints recently received from England.

"For the love of Mike!"

The British are admirable allies but their method of projecting parts on a blueprint is exactly opposite the American method.

"Shall we train our men to read backwards or shall we redraw them?"

About the time this discussion went on, demolition crews were tearing down four or five old buildings—last surviving factories where Packard had built Liberty engines for World War I. On the site Packard was to build a new factory to produce Rolls Royce Merlin XX engines for aircraft use.

The Merlin XX went into production in England in April, 1940. When the first Packard engines came off the line in August, 1941, they were Merlin XXVIII's. In spite of those persistent changes in design, Packard, in 40 weeks, had created a production facility for Merlin engines, larger than Packard itself—which took 40 years to build. The job included the purchase and placement of 3,000 machines—only three per cent of them adapted from Packard's automobile plant—and

training the men to run them. It included redrawing the blueprints—a mile of blueprint paper a day into that—altering them so that American accessories might be used.

It included developing 300 suppliers of raw materials and subassemblies.

Moreover, at almost the same time, Packard was putting together an even larger plant to make engines for Navy torpedo boats.

The story for other automobile companies is much the same. Buick is making Pratt & Whitney motors in a new factory that was completed in six months. The size is secret but 410,000 bags of cement, 115,000 tons of sand and stone, 2,500 tons of reinforcing steel went into it. Among its innovations is an ingenious "plug-in" system which reduces the time of setting up an engine for test from some six hours to 45 minutes.



ACME

A Lockheed applicant for training tries an aptitude test. 10,000,000 workers may be needed

In addition, the engine being tested runs generators which help supply power for the plant.

Chrysler worked out a plan to adapt an auto assembly line to Martin bomber sections although the bomber parts weigh 4,800 pounds against an auto body's 976 and measure 33 feet against the car's 11 feet five inches.

The auto builders have helped in other ways, too:

The British once said that planes like the Bell Airacobra were impossible. In this plane, a tractor type—with the propeller in front—the motor is set amidships. The design has certain advantages, among them the fact that the plan leaves room for a cannon in the nose, but it means that a five foot driveshaft must connect motor and propeller.

"It won't work, you know," the British said. "It flutters."

"Flutter" is the same phenomenon that shook down the Tacoma Bridge not long ago. It's poison in aviation. A wing that will stand up under the dead weight of 100,000 pounds of shot on the ground will shake itself to pieces under the ministrations of a two pound vibrator. But automobile men knew about flutter, too. They had licked it in automobiles. Into the Airacobra power transmission they built the same sort of vibration dampener they had used on automobile driveshafts for years.

No more flutter.

An old automobile custom

While the auto industry was helping the plane builders, its subcontractors and suppliers were helping it. Those people are legion, a fact which came as a shock to a highly placed bright young man in government who warned an auto builder:

"On this contract, you will have to use subcontractors."

"Hell," said the auto builder, "we don't know how to do it any other way."

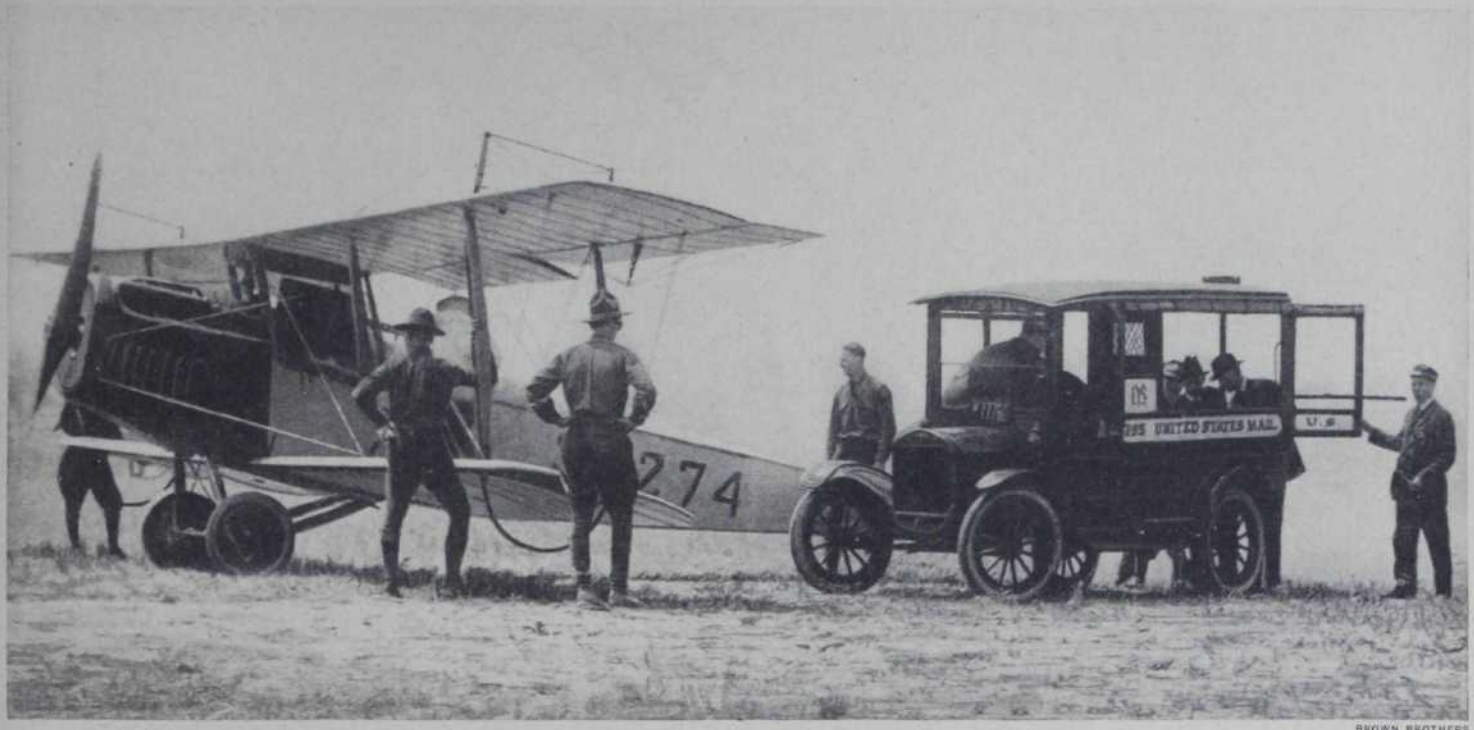
Among the suppliers are the B. F. Goodrich Company, now making 3,000 different products for aviation, and the Firestone Tire & Rubber Company, making, among other things, leak-proof gas tanks and special aviation tires, worked out in collaboration with Bell Aircraft.

How well the subcontractors and suppliers have done is best told by the instrument makers, a group of precisionists who, though not spectacular, are highly important.

"What good does it do to 'Keep them flying'," says one of them, "if they don't know where they're going?"

Modern instruments tell them that, as well as a score of other things that a pilot needs to know if carefully trained men and expensive government property are to be safe in his keeping.

The first aviation instrument was a rag tied to the



BROWN BROTHERS

The first air mail flight from Washington was made in 1918 by an Army flier who used a polo field as an airport

rigging. As long as it blew straight back, the plane was in balanced flight. Most early pilots spurned them, preferring to absorb vital flight information through the seats of their pants. The method is still good with limitations, although the man who can tell oil temperature or follow a radio beam that way must wear very sensitive trousers.

For that matter, the instrument which is going to record motor revolutions, altitude, air speed, or lateral stability must also be unbelievably accurate. Tony Failla found that out. His plant, the New Jersey Gear Company, took a contract from Sperry Gyroscope Company:

"We cut plenty gears before Sperry came along. We'd cut 'em big, and we'd cut 'em small, and we thought we were pretty good. Plenty of prints from which we worked showed tolerances of a thousandth of an inch or less."

From his desk drawer he pulled a couple of gears that had plenty of room in the palm of his hand.

"See these? They look alike to you—and to me, too. But they aren't. This one has a pitch diameter that is .001 too big for a Directional Gyro. The other is O.K. For seven months we sweat over gears like these."

The Directional Gyro and its companion instrument, the artificial horizon, aren't Sperry's most complicated instruments, although each has 300 parts, some of them with tolerances of only .0005 of an inch. Yet Tony Failla learned to make them. So did manufacturers who formerly made postage meters, electric razors, cream separators and printing presses; and, in its own plant, Sperry, needing more workers, streamlined its training course from four to two and one-half years.

Similar measures enabled the Aircraft Accessories Corporation, makers of aircraft hydraulic units and radio equipment, to increase output more than 500 per cent between February, 1941, and February, 1942. For them, a soft drink vending machine company is making radio cabinets; an electric organ manufacturer is making radio condensers; a ten-cent-store novelty manufacturer is turning out intricate die castings.

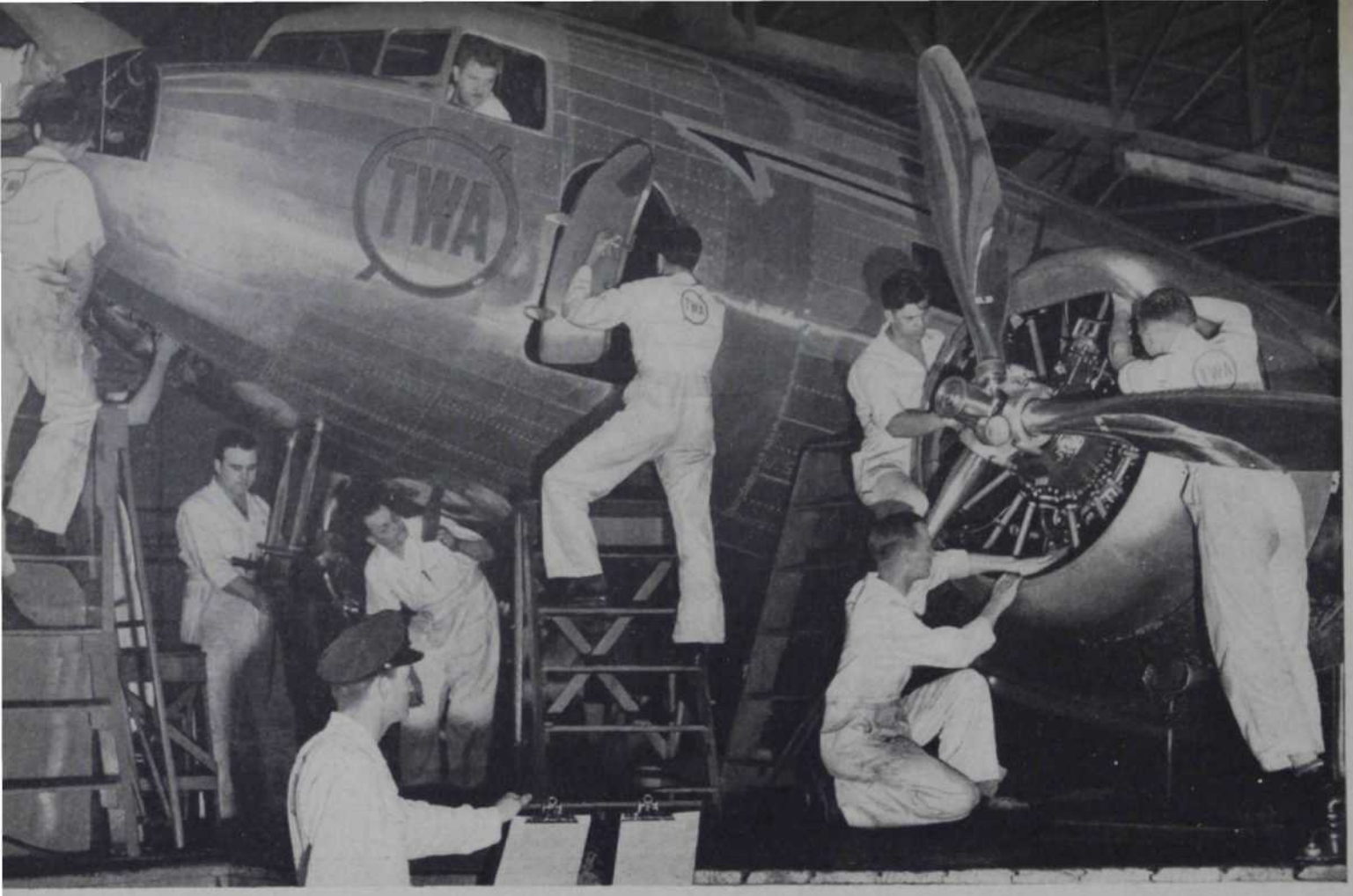
The Japanese helped, too.

"When the Japanese attacked Pearl Harbor, this became a personal war with each employee and, with his own hands and his own effort he set out to do his part in winning it," says R. C. Walker, president.

The Foxboro Company, where each instrument "is an individual production job, custom-built to specifications," has doubled the number of employees by means of a system depending on preliminary training and experienced subforemen.

In this passion for precision, the instrument makers have rivals in a kindred industry dedicated less to keeping them flying than to happy landings in the event that enemy enterprise or other eventuality makes further flying impossible.

Veteran of this industry is the Switlik Parachute Company where workers striving constantly for new



Commercial airlines, called by President "backbone of defense," help "multiply executive brains," are ready for sterner jobs

records—they recently shipped 1,000 parachutes in one week to meet an emergency order—keep a roster of the Caterpillar Club constantly before them.

Parachutes were an unrealized dream of aviators in World War I. The first live jump with the new free-type chute was not made until 1919, after years of experiment by Floyd Smith, now with the Pioneer Parachute Company. Although they have saved scores of lives since then, Pioneer today is making more chutes in one week than the average company turned out in a year of peace-time effort.

In spite of the loss of Japanese silk—for years the preferred parachute material—they will continue to make them. Experiments begun long before Pearl Harbor have produced a nylon parachute cloth.

4 ★ They'll Go On

Benjamin Franklin's air mail letter. "Let's get down to terra firma." Polo field for an airport. He flew around the bay. $200 for one trip. A bonfire of Fokkers. "It multiplies brains." Story of a broken gear. The nation is looking at us.

DR. BENJAMIN FRANKLIN was the first American to receive an "air mail" letter. It reached him in England in 1785, having crossed the English Channel in a free balloon piloted by Jean Pierre François Blanchard and Dr. John Jeffries, a Bostonian, who seems to have been the first American air mail pilot.

That title is unofficial. The Post Office regards 1911 as the natal year of air mail in this country. In that year the Department recognized the airplane as a responsible means of transportation and asked funds for "an investigation of the practicality of carrying mail by air." Congress was not enthusiastic.

"The Post Office Department has been up in the air long enough," one Congressman insisted in the course of debate. "Let us get it down to terra firma once more."

At that time considerable mail had already been carried by air either as an experiment or a stunt and in 1910 Pilot Parmalee had piloted a bolt of silk from Dayton to Columbus in what was called the first express delivery by air. Mr. Parmalee added dignity to the occasion by making the flight wearing a derby hat. A Mr. Morehouse, his passenger, wore a grim expression and carried the silk in his lap.

In 1918, the Post Office finally advertised for bids on five mail planes. The purpose was two-fold—to carry mail and to train Army fliers.

The fliers got the experience—mostly hazardous. In

Washington, for instance, early flights were made off a polo field.

Ships were inadequate, night flights were made over unlighted airways. There were amusing adventures. One pilot, for instance, being told to keep Chesapeake Bay on his right on the Washington-Philadelphia run, followed directions so implicitly that he flew around the bay and was headed south on the eastern shore when lack of gas brought him down.

In spite of difficulties, however, casualties were remarkably few and the service was soon completing 93 per cent of its schedules.

Meanwhile over the country something called "airlines" was growing up. Taxi services would have been a more appropriate title. They had small resemblance to the government subsidized airlines of Europe.

Friends and Critics

In 1921, we had 88 of them. By 1922, the number of these had grown to 125—by 1923 to 129. But, when the latter count was made, only 17 of those registered in 1921 survived and only 56 of those recorded in 1922.

The hardier ones were doing a sufficiently good job, however, that Congress, in 1925, felt justified in passing the Kelly bill: "An act to encourage commercial aviation and to authorize the Postmaster General to contract for the mail service."

Although we are interested in history here only incidentally, any study of aerial preparedness must consider—however superficially—the airlines' contribution to it.

Among those contributions were better planes, lighted airways, safety devices. With Army and Navy purchases reduced by limited appropriations, private interest in aviation negligible, the airlines served for years as the plane manufacturers' best customers and severest critics.

When the lines first passed to private operation, passenger traffic was an abomination. Mail paid better. Air fare from Chicago to New York was $200 and the passenger usually rode among the mail sacks.

By 1927, Western Air Express had become an experimental laboratory for the study of passenger traffic. Spartans who rode that line will remember a spot called "Desert City" in the West. It was a gas pump and two outhouses visited only by pilots whose passengers felt the need for comfort facilities not available on early planes. That wouldn't do.

"A Ford-Stout plane would get you to the Coast in 24 hours," says a man who remembers. "Then you had to go to bed."

That wouldn't do, either. Fords, replaced by American operators almost 15 years ago, are still flying in other parts of the world.

When a wooden winged Fokker crashed, killing Knute Rockne, among others, Fokkers were grounded. Eight were burned in a huge bonfire at Dallas.

Wood was replaced by metal; the low-wing replaced the high; pilots reported by radio.

As traffic increased, the lines spurred designers on to bigger planes seating 14 passengers, then 21, finally sleepers. Some of those designs have been used, with only slight changes, for bombers.

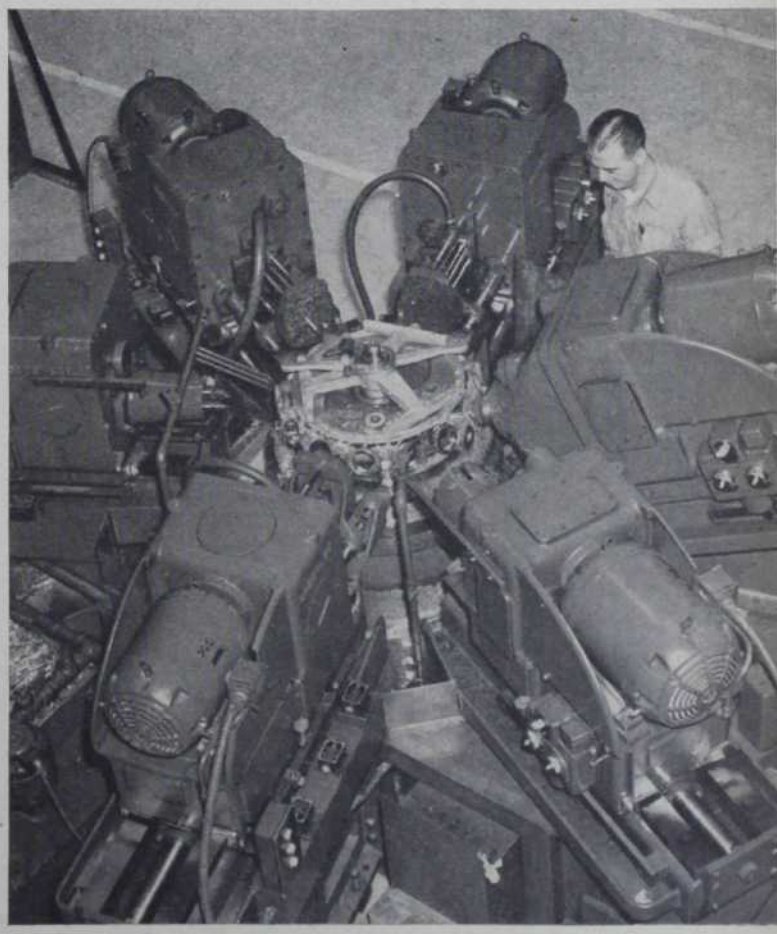
Today we have a network of airlines covering some 42,000 miles. Last year it carried nearly 4,000,000 passengers, flew more than 133,000,000 miles. Already that has meant much to the military effort.

"It multiplies brains," is the way one man says it.

He had in mind situations like that which developed when an eastern manufacturer was urged, for decentralization purposes, to put a new defense plant in the Middle West.

"We can't do that," he said. "We can't manage a middle-western plant from here."

The airlines make it possible in many cases to do just that.



Putting plane motors on production lines called for new machines, some not even thought of a few years ago

Key executives of one company with widely spaced plants are able to visit all of them. This company first planned to get its own planes for their use, but gave that up.

"We would have needed a fleet of planes."

That isn't all.

A broken gear halted production on plane and truck motors in the Aircooled Motors Corp. plant in New York state. F. L. Howard got on the telephone, located new gears in Philadelphia, asked delivery by air. Four and one-half hours later the machine was running.

Recently a 2,600 pound shipment of circuit breakers, needed in Detroit, arrived the same day they were ordered from Philadelphia, moving by regular air express.

Such behind-the-front service is a daily occurrence. Blanketed in military secrecy are other services being used now or available if the front ever reaches this country.

In 1936, Franco's Spanish rebellion seemed doomed without the support of Moorish regiments. Unfortunately for him, the Moorish regiments were in Morocco across the Straits of Gibraltar, which were controlled by enemy ships. Franco's German advisers were equal to the problem. They sent for big Junkers transports, flew 4,000 men and 200 tons of war material over the Straits to the relief of Seville alone.

Later German transport planes flew 2,000 German infantrymen to Aspern field to seize control of Vienna. More recently they are supposed to have flown 6,000,000 pounds of material to the Russian front, carried 2,381 wounded home.

Fighters ride to war

Even the Italians, within 100 days after their entry into the war, flew nearly 20,000 military passengers, and more than 3,000,000 pounds of war freight a total of 2,000,000 miles. Of peculiar service has been one remarkable transport which has carried short-range single-seater fighters to Libya.

Transport planes have been given small space in our military building effort but, if a crisis comes, the airline fleets are standing by, and the military-airline organization necessary to put them to immediate use is ready.

Even without replacements from an industry now busy with military building, we will have that fleet a long time. With crack pilots to fly them and skilled mechanics to service them, modern airliners "never grow old."

The skill and know-how that went into those planes will go into the planes that defend us from attack. The men who build them, learned their craft the hard way. They built better planes in the beginning because they wanted to. They still want to.

We have something else

As Mrs. Martin, mother of Glenn Martin, recently told a radio audience:

"I flew with him in these early airplanes many times and I was never afraid. I knew that anything he built was bound to be all right because he was my son. Now Glenn is making planes for national defense. I just want you to be as sure as I am that his planes are as good or better than any others, anywhere. And that he'll build as many as America needs to be strong, just as fast as he can."

The other plants will build them, too, for us and for our allies. Millions of free Americans will help. What if most of them are new at the business? In the Douglas plant a new lathe was recently unloaded, uncrated, moved down the aisle, set in its allotted place, wired up and put in production in exactly one hour and 52 minutes. That was a routine performance.

We have an aptitude for tools. We have something else. A sheet metal fabricator at Douglas put that in words in a letter to the other members of his department:

To: The boys in Section 3 12/23/41
From: J. S. Will, Dept. 89

Subject: Our Job
Copies to: Everybody

The entire nation was looking at Guam and Wake Island the last two weeks. In the last three days the Japs have claimed that they were "mopping up" these two islands. Our fellows there were about the same age we are, went to the same schools, believed in the same things that we do. They were outnumbered fifty to one. No one would have been ashamed of them if they had asked for quarter in the face of such odds, but they didn't. They made the Japs "mop them up." I believe the whole country expected them to do it. I know they felt that it was expected of them.

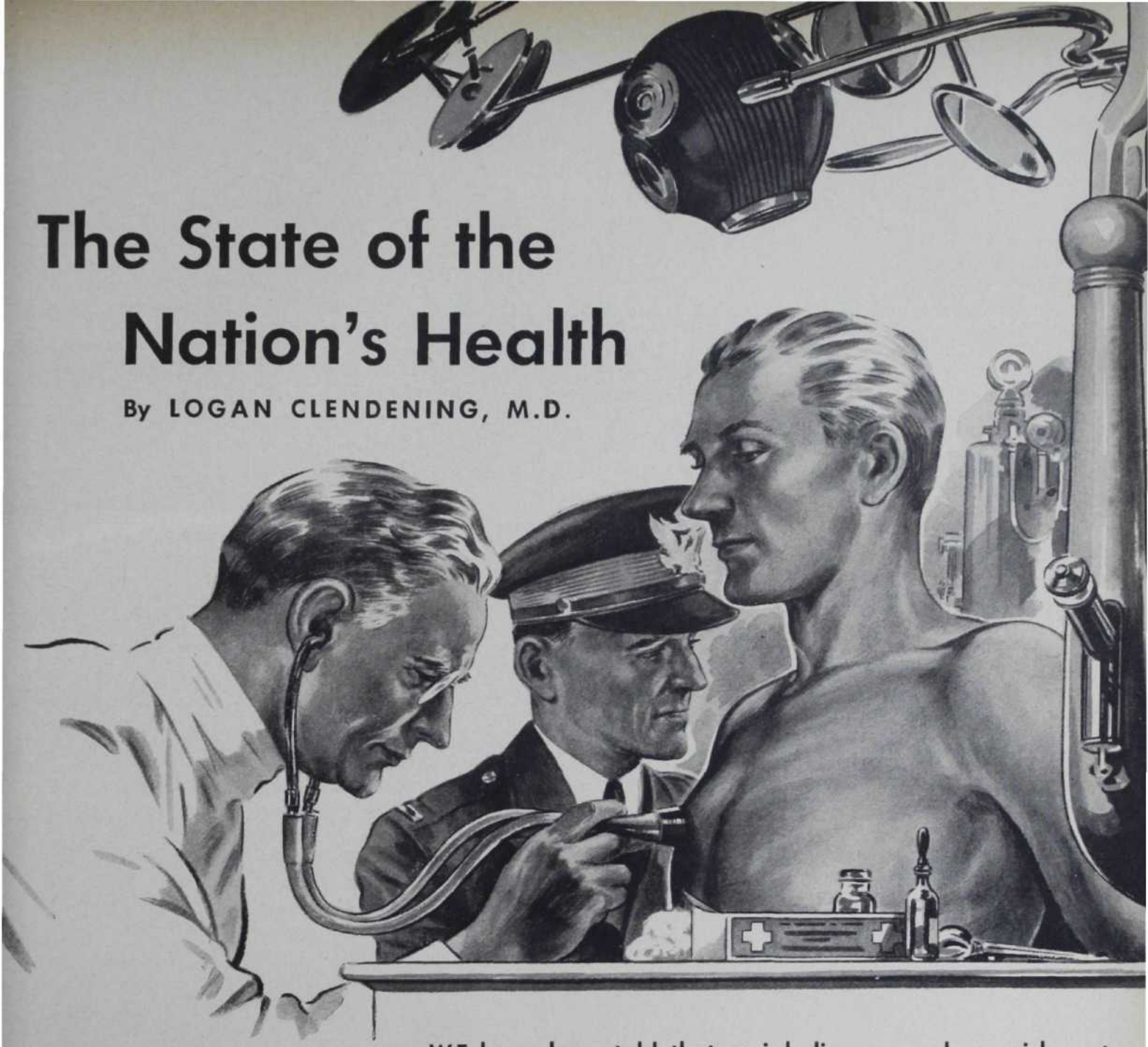
The entire nation is looking at us, too. They expect us to drive every minute we are in here. Every minute we let up to talk to the fellow on the next bench, to go upstairs for a "railroad rest," to sneak a forbidden cigarette, we are cheating those boys that stayed in there and made the Japs come in for the finish. Most of us have made a start at knowing our jobs, none of us work fast enough, hard enough, or accurate enough.

Three weeks ago we were working here for money, for future security, or because we liked this kind of work. Today we are working for our own self-respect. We must satisfy ourselves that we are giving all we have. So let's go from here on.

They'll go on!

The State of the Nation's Health

By LOGAN CLENDENING, M.D.



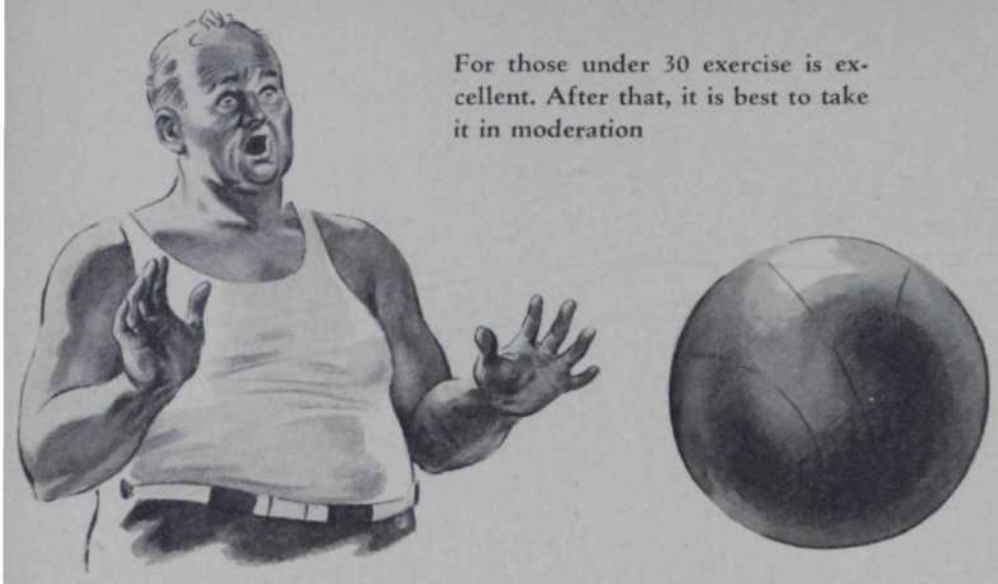
WE have been told that social disease, undernourishment and physical impairment are sending us into war a nation of weaklings. Most of us have no way to prove otherwise. But here is an informative commentary by a medical expert who weighs his words in the scales of training and experience

YOU, America, are a good deal healthier than you may have been led to believe by some of the official pronouncements about you. This statement is not my own opinion, but is derived from quite unimpeachable sources. The *Journal* of the Pennsylvania Medical Society carried at the masthead of one of its leading articles last year "The United States is today the healthiest large country in the world." And one can add—the healthiest large country in all history.

This is not the viewpoint that those in authority have seen fit to give you. Those in authority have become prophets of gloom of the largest caliber. Witness Surgeon-General Parran's alarming pessimism with regard to syphilis. He has also said that 40,000,000 Americans are in a state of semi-starvation. And Paul V. McNutt, Federal Security Administrator, from a ripe clinical experience in the law and public office holding, capped the General by saying that 95,000,000 Americans didn't know how to eat. The effect of these and other homilies on the national mind is reflected in recent newspaper reports that the President was disturbed about the health of the nation on the basis of the figures of rejection for the draft boards.

It seems to be an inevitable attitude of the official mind when elevated to a post which has to do with public health that the first thought is—"Now I must scare the liver out of everybody or people will think I am no good. There wouldn't be any sense in my appointment if the people's health is all right. So let's see how I can frighten them."

I have a letter from a national health coordinator just appointed who practically said that very thing. It appealed to what was called my vast experience in these matters and wanted my advice as to how the public could be brought to realize all the faults it was committing. I replied that I didn't think the state of the nation's health was nearly as bad as had been suggested and why



For those under 30 exercise is excellent. After that, it is best to take it in moderation

wouldn't it be a good thing to cheer everybody up in this grim period when our spirits need all the hopefulness possible. Tell people their health is all right, because that is true.

I received no reply from the coordinator direct. Only a cool little note from his secretary saying they noted I thought the health of the nation is good and they hoped it was true.

Optimism in public health

THE incident is worth analyzing further. Why should anyone appointed to a government position ask me what to do? Certainly not just as an idle compliment. Things are too serious for idle compliments. If a person in these times is appointed to an administrative position surely the American people have a right to expect that person to have a program.

Why aren't people who are appointed to manage public health chosen because they have training in the subject? It is a professional subject. At least two of our great universities grant a degree in public health. It is a highly technical field. It can't be just picked up.

Now let's look at what hard-headed experts say about the state of the public health. In November, 1941, the Metropolitan Life Insurance Company, an organization whose profits depend upon the country's good health, printed in their bulletin a leading article entitled —"A Lesson in Optimism"—which stated:

> Such have been the successes of modern medicine and public health in the last few decades that the results have excelled even the most sanguine expectations of the leaders in the field. Life tables constructed not on actual mortality, but on what 20 years ago seemed the best results attainable have since been not only equalled but surpassed by experience.

Rejections for physical unfitness among the draftees of 1940-41 have been cited as an example of the deterioration of the race due to soft conditions of modern living. But let us compare the figures for such rejections during the Civil War when the examining boards were dealing with the first generation of hardy pioneer stock and when the medical boards had no X-ray, blood pressure apparatus, thermometers (Dr. W. W. Keen, of Philadelphia, claimed to be the first physician in America to use the clinical thermometer which he did during the Wilderness campaign in 1863), little regard for dental defects, flat feet, practically no knowledge of the early diagnosis of tuberculosis, psychopathy, or diabetes, and when they needed men.

The percentage of rejections in the Civil War were 37 per cent (the draft ages were 20-45, which undoubtedly accounts for a large proportion of rejections in the higher age levels); in 1940-41, 38 per cent.

True during 1917-18 the rejections were only 31 per cent which would seem to argue that from 1861 to 1917 the health of the young men of the nation improved, but that from 1917 to 1940 it deteriorated.

Examinations are more strict now

SUCH sweeping conclusions, however, are obviously suspect. Race deterioration does not happen that way that quick.

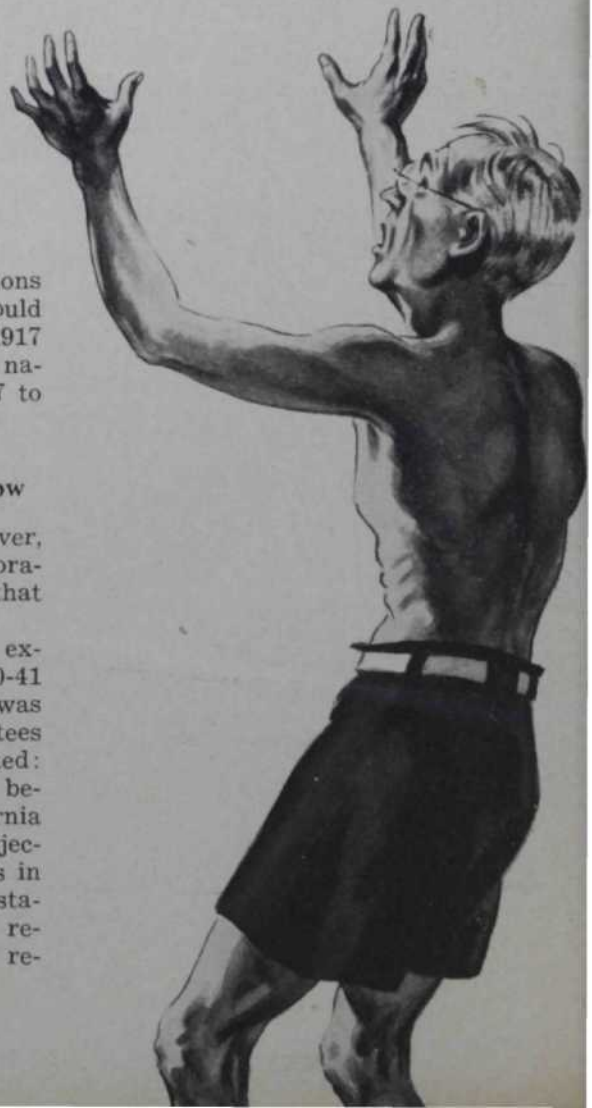
The real answer lies in the extreme care with which the 1940-41 draftees were examined. In 1917 it was notorious that thousands of draftees with active tuberculosis were accepted: In 1940, 15,000 men were rejected because of "lung defects." In 1917 hernia was not regarded as a cause of rejection: our surgical operating rooms in the Army hospitals where I was stationed were daily used for hernia repairs: in 1940, 15,000 men were rejected for hernia.

The machinery of the examining boards in 1917 was notoriously lax. In many rural communities draftees were accepted with finality after physical examinations by dentists and veterinaries when no member of the medical profession was available. In my hospital wards two draftees with a leg amputated were lodged pending discharge, after having been accepted in that condition. Other causes of rejection in 1940-41 were dental defects, eye defects, easily corrected by glasses but inadmissible for routine army duty, flat feet, ear, nose and throat defects—all of which would be found in Utopia, and none of which indicate any real racial physical deterioration. (I am indebted for the comparison of the Civil War and 1940 draftees to Nathan Sinai in an article "Physical Fitness and the Draft" in *Harper's Magazine*, November, 1941.)

Geniuses are needed

IN this connection it is well to remember that mere bodily fitness is not the real thing we need most. If we could only develop a few military and naval geniuses it would be much better for the national security. There is no formula for this. And physical fitness is not necessarily the key! A great many of the world's greatest captains would

(Continued on page 65)



MANAGEMENT'S *Washington* LETTER

A last minute roundup by FREDERICK SHELTON, Washington observer of government and business

GET SET FOR BAD NEWS from Washington. The Washington news from day to day is mostly bad. It will be bad through most of 1942. Each day's grist means new upsets for business-as-usual. But your job is to translate today's news into business repercussions weeks and months hence. Figure for yourself how the new rules and regulations will cut across your own affairs.

> Here is a key fact which you should keep in mind: During the next 12 months between 8,000,000 and 10,000,000 persons will be shifted from civilian occupations to war industries. The shift will amount to a major upheaval of the whole national economy. You need to keep this picture in mind and plan accordingly.

Plain fact is the war is going badly. Hard-boiled analysts frankly foresee 1942 as a year of reverses, losses, playing for time. Don't let your wishes and encouraging headlines blind you to dark facts. Government itself will soon frankly stress the bad side, as a matter of policy (just as the British had the nerve and good sense to do).

It's tough now and will get tougher, but you'll adjust to it, just as you get used to no maid, or no chauffeur (if you ever had one), or going on this "war" time instead of "sun" time.

> Write off the next year or two: Try to keep solvent, high and dry. Forget about extra profits. As individuals and as businesses you may as well begin now to make sacrifices along with your 4,000,000 or 8,000,000 boys who will be in the ordeal of fire a year hence.

THINK OF IT THIS WAY: In 1932 the national income was about $50,000,000,000—hard times. In 1942, ten years later, the volume of goods available for civilians will be about the same as 1932 national income could buy. Our national income in 1942 will be about $105,000,000,000 but nearly half of it will go for war. Government plans to take about one-fourth of our national income for taxes and hopes an equal amount will go into defense bonds. So, this year, as in 1932, people will go without lots of things (lower standard of living—especially for the "well-to-do"). We got along then; we can get along now.

This big difference though: Then we lacked the money to buy. Now we have the money, but it must go for taxes or government bonds or else we are told we just can't have certain things because the materials are needed for war goods. And in 1932 many people faced actual hunger. Now there will be food and shelter and clothes for all, of a sort. (Labor unionists and farmers will be pinched less, relatively, than most business men.)

PRICE CONTROL—RATIONING. Government statisticians figure the next 12 months may produce between $10,000,000,000 and $20,000,000,000 of "hot" money (meaning extra new pay rolls in excess of the extra income sopped up by taxes and bonds sold to people, savings banks, and insurance companies). Aim is to try to get this "excess" income invested in war bonds. Fear is that much of it will be used to bid up prices on available "free" goods.

Price rise of 12 to 18 per cent during the next 12 months is the consensus (index of general wholesale prices).

The war program will demand gradual tightening of price curbs and more rationing. A few weeks hence you will see much more stress on rationing, to prevent inflation and confusion. But don't expect miracles. Enforcement job will be far bigger than prohibition job was. Fact is, force (fines and jail sentences) will be a last resort. Main push will be to "sell" the public on compliance—make it patriotic for neighbor to report neighbor for price gouging or hoarding. Rationing in many lines will be used increasingly to supplement price fixing. (Britishers tell us they had to come to rationing more and more as part of the price control operation.)

Sugar rationing is to be a practice test for later broadening of rationing.

Leon Henderson, price boss: He's a tough-skinned unordained economist (no Ph.D.) who will bull ahead with the job of managing the national economy. Roosevelt and Nelson will give him plenty of leeway because he is ready to tackle anything. (He could have gone far as a labor union big-shot.)

SQUEEZE ON SMALL BUSINESSES. Big new peak in war production is due about June. Then the squeeze on non-defense industries will begin to ease, due to shiftover to war stuff, and to clarification as to what civilian businesses will be encouraged as essential to internal morale. And by then many will have thrown in the sponge and taken jobs in war industries.

> Special treatment for businesses doing annual gross of under $100,000 is the policy. But it's one thing to be entitled to a W.P.B. permit and another to get needed materials.

Officials here admit that many small businesses will have to close. Many small dealers, retailers and service businesses will just have to find other work. Government itself will hire many displaced salesmen to man W.P.B., O.P.A. and other war outfits. Little factories will gradually get war contracts if their owners keep scurrying, trying to find things they can make. More W.P.B. procurement men charged with finding jobs for small plants soon will be placed in the field, working with Army and Navy regional buying officers. (Your Chamber of Commerce or trade association should know how to contact these men.)

BUSINESS MEN WAR WORKERS. Donald Nelson is doing all right. His stock will rise, partly because he will get credit for tremendous results growing out of past preparatory work. In three or four months factories will be turning out so much stuff that many recent snipers will have to talk about the miracles of American industry. Business men in Washington will still be harassed by certain New Deal elements, but the Nelson regime will relieve the pressure a bit.

Nelson doesn't quibble when critics urge replacement of "dollar-a-year" men with salaried personnel. Knowing it's a scheme to get $6,000 to $8,000 jobs for political favorites or New Deal career men, he is willing to go to the country on this issue.

> Here's a background item most newspapers didn't print: Senator Ball (Minn.) at the Truman Committee hearings asked Nelson if he didn't fear that dollar-a-year men were "prejudiced in favor of the capitalist system?" Nelson gulped and said he entertained the same prejudice. So what?

The crowd that undercut Knudsen of O.P.M. is now out to get Jesse H. Jones. Secretary Ickes is a chief strategist, feeding anti-Jones stories to pet columnists. Jones can take it—will be here as long as Ickes. Congress is with him.

On rubber, Jones was handicapped because Russia gobbled up rubber he was trying to buy, and because the Hull and Wallace groups feared a subsidized synthetic rubber industry here would mean protective tariffs on rubber after the war.

TAXES FOR 1942. You won't know the new law until about August. But you should begin NOW to put aside 10 per cent to 15 per cent more each month for taxes than you did under the 1941 law. Here are guesses as to some new tax law features:

Excess profits: Congress will not vote Treasury plan to base excess profits tax on invested capital ONLY. Key tax men in Congress just don't like it. Method of figuring tax will be tightened, however.

Regular corporation rate (now 31 per cent) probably will go to 35 per cent, possibly 38 per cent or 40 per cent.

Excess profits rate (now 60 per cent at top) will go to about 75 per cent, maybe 80 per cent.

Broad general sales tax is gaining support in Congress...a definite possibility. Treasury's new tax adviser, Randolph Paul, is dead set against sales taxes, however. Calls them inflationary.

Congress will not go along with Morgenthau on taxing outstanding state and local bonds—most congressmen think it would be a breach of faith.

Taking of profits on investments will be given a bit more encouragement. Plan is to allow special tax treatment for deals where capital assets are held only 12 months, instead of 18 as now. (Treasury now loses revenue because people can't afford to take profits.)

> Business men can help farmers with taxes. Most good farmers will pay income tax this year. ($1,500 gross income or more.) Why not help them figure it out, and casually say you've been paying for years? Wouldn't this be good business?

War profits: Strict limit to, say, six per cent gross on a specific war contract will not be voted. Special committees headed by Senator Truman and Representative Vinson seem to suggest such limits, but the average congressman knows the right test is the net at the end of the year after excess profits taxes and other taxes, after lumping losses with profits. Some don't, however. Query: Have you ever tried to explain to YOUR congressman this simple rule of business?

Government bond market: Federal Reserve Banks will be authorized to buy bonds direct from Treasury in a crisis. Here's the idea: If public debt ever gets so big that people and banks are afraid to buy government bonds, then the Treasury can print bonds in any amount required and ask Reserve Banks to take them over at some low rate of interest. This is the managed-money group's way of freezing the Treasury from the "grip" of the money market.

LABOR UNIONS—MAN POWER. Labor union unity is NOT accomplished by Roosevelt's joint A.F.L.-C.I.O. committee. But union obstacles to a big apprentice training program will be largely removed. And John L. Lewis is partly neutralized for the present.

There's a question whether the White House really wants a solid phalanx of 10,000,000 unionists, UNLESS it's completely docile.

Lewis will bob up again—still has plenty of ammunition. You will soon hear of his drive to unionize the dairy farmers. He still has big dreams of labor-plus-agriculture—as a power in politics.

> Mobilization of non-military man power will go to Paul McNutt largely because his department has the U. S. Employment Service and Social Security files, but partly to sidestep a choice between Sidney Hillman, Miss Perkins, Dr. Studebaker and Aubrey Williams. One aim is to stop employers from bidding against each other for scarce skilled workers.

The new youth training set-up will stress training for war industry jobs, but will provide all the facilities for the central government to indoctrinate the youth, discipline their thinking.

In due course the women will be "mobilized," too.

Antitrust suits which interfere with W.P.B. production schedules will be quietly shelved for the war (but revived after the war).

POLITICS IS NOT ADJOURNED. It's not polite to talk 1944 elections now, but high Washington big shots DO talk, and many politicians think nothing else. Wallace is Roosevelt's choice (on probation), although a Fourth Term is not out of the question. A clever set of arch New Dealers is maneuvering to take Douglas from the Supreme Court and run him. Douglas is shrewd enough to avoid the appearance of running, but would like to be drafted. Meanwhile, McNutt is running by standing still (by waiting for Wallace, Douglas, et al., to eliminate themselves by their own mistakes).

> Willkie is still running, of course, and that's why shrewd Mr. Roosevelt doesn't give Willkie a glamour job in the war set-up.

Nelson is NOT running, but if he's good enough the public will just naturally start running him. Nelson is not as dumb in politics as he likes people to think him.

Same for MacArthur. His heroism in Luzon automatically put his name on the list for 1944. And he's not just a "name." Republican, and from Wisconsin.

1942 Congressional elections WILL be held: No issue on war except as to whether the Administration has done all it could, to win. Strategy of Republicans will be to soft pedal all other issues. Each congressional candidate will campaign on his own merits. Recent special elections to fill vacancies suggest that the public doesn't think it's unpatriotic to oust the "ins." Ed Flynn, Democratic party chairman, gave the Republicans an opening by questioning the right to criticize the Administration. And Mrs. Roosevelt's recent O.C.D. pet performers made plenty of votes for the Republicans, offsetting many Republican mistakes.

HOW LONG THE WAR—THEN WHAT? Long war? Short war? It's a guessing game. Two years to five years is the range of Washington guesses. But by April-May we ought to do more than guess. We'll know then whether the Nazis have the fire to come back strong—in Russia, British Isles, Near East, or wherever the big 1942 spring play is to be. By midyear you may be able to see the beginning of the end, or else know beyond a doubt that you must dig in for a long, long tussle.

> Theory of the Administration's professional planners is that a terrible depression will follow war UNLESS government continues to spend many billions for army-navy, public works, world reconstruction, and to subsidize private industry.

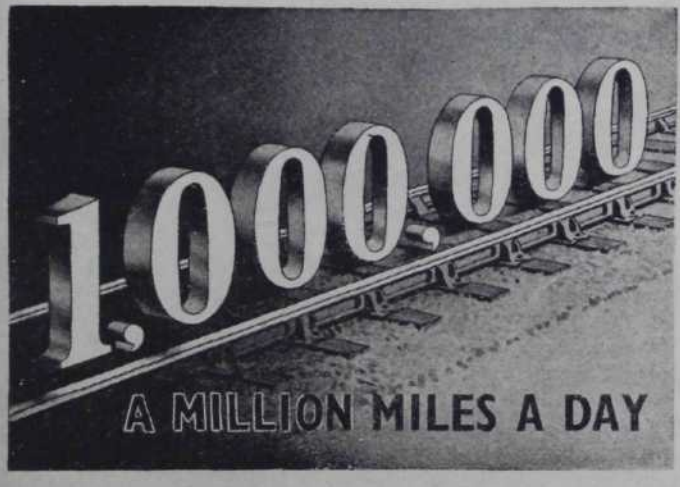
The whole process of close integration of major industries for war purposes fits into the pattern of New Deal thought that after the war expert government boards will help chart production-price-sales programs for entire industries. Those New Dealers who think on these lines rely much on the theory that business men have a thirst for government subsidies, and so business subsidies are considered as part of the post-war planning. You will hear more on this within a few weeks.

POSTSCRIPT—I.C.C. and White House will urge roads to pay debts...silver is finding new uses in industry as substitute for lead and zinc...politicos shocked when Edward J. O'Neal, American Farm Bureau head, indicated break with Administration's Farm Security policies...Government may requisition all junk yards to get supplies—scrap steel, iron, copper, brass—which junk dealers now tend to hoard... Treasury delighted with employer's efforts on pay-withholding plan for purchase of defense bonds...the kind of America we will have when war is won will depend on whether business men demonstrate now that they CAN manage the business functions of U.S.A....if they do, the public will approve, otherwise antibusiness bureaucrats will take over...trend against private enterprise can be reversed if business men sell themselves to the public.

"It Will All Come Back..."

By ROBERT S. HENRY

WAR-EXPERIENCED England encourages business to encourage future customers by keeping the machinery of trade in gear and ready to go



British Railway Trains cover over a million miles a day in the service of the Nation and the Public. Goods Trains, Passenger Trains, Troop Trains, Munition Trains . . . day in, day out, in an endless cavalcade along the gleaming steel highway they go, safely carrying their loads of men and materials to every corner of the Kingdom. Thus British Railways, essential in peace-time, are a vital necessity in time of war.

BRITISH RAILWAYS

To the limit of paper restrictions, British business keeps telling its story to the world



It will all come back! The Fair! Nominally, you went to amuse the children. But actually, because you enjoyed its gaiety, colour and glitter. Sooner or later it will all come back. And with the return of normal times, Karrier will resume their task of solving the transport problems of industry. Meanwhile, the Karrier organization is concentrating its activities on national service—and incidentally gaining added experience which will benefit all Karrier users in the future years of peace.

KARRIER

KARRIER MOTORS LTD., LUTON BEDFORDSHIRE

National service now but, later, added experience from which all peace-time customers may expect to benefit



Our ally-in-arms recognizes that victory will be hollow if the things she is fighting for are destroyed—a free marketplace and an economic machine which will produce jobs and goods in abundance. Typical of this ideal is a reduction of corporate taxes, in order that her corporate structure may be maintained and strengthened. The spirit of enterprise demands food no less than Moloch. —THE EDITOR

"WHEN peace breaks out (as it will do, you know), and the lights come on again. . . ."

In such words one British firm asserts its faith that this war will not last forever, that when it ends this world still will be inhabited by human beings with needs and wants, and that there will still be business to do in meeting those needs and satisfying those wants. So the British, being

two and one-half years into a war of such intensity and personal impact as we are not likely to know, but being also, as they proudly assert, "a nation of traders," are to the best of their ability maintaining the machinery of their economic system, keeping business going as part of the effort toward stability and sanity.

The effort is, partly, a contribution to morale now in the fight to preserve that liberty of action which one British company likens "to a flame in the darkness . . . a flame now mightily assailed by draughts from the Dark Ages." It is partly a contribution to the future, holding things together and keeping them going "Until Then . . . ," as another British business concern puts it.

Preparing for a better day

IT IS done, too, in recognition of the fact that the taxes which go to sustain the nation's mighty war effort must come, at bottom, from the earnings, the dividends and the pay rolls produced by the nation's business. Wherefore, with the blessing of the British Government, British business carries on with its research, its technical developments, its testing of substitutes and their promotion, and the other activities which look to days after the war.

Manifestations of that carrying on are plentiful in the columns of the magazines and newspapers which, though sometimes delayed, reach America. The British go ahead with their advertising, even though they may be without goods to sell, even though, on the first page of the same journal in which the advertisement appears, this announcement may be displayed:

> The fact that goods made of raw materials in short supply owing to war conditions are advertised in this magazine should not be taken as an indication that they are necessarily available for export.

Why do they do it?

Because, as one company puts it, they know that in time "It Will All Come Back!"—"It" being taken to mean, in one bit of copy, "The Country Fair—coco-nut shies—fortune tellers—refreshment and entertainment—all the gaiety that conveyed the atmosphere of Merrie England," and in another, "The cool morning air at the river-side. The first bite. The feel of the line, promising a specimen fish! Sooner or later it will all come back."

"Meanwhile," says the company, "we are concentrating on national service



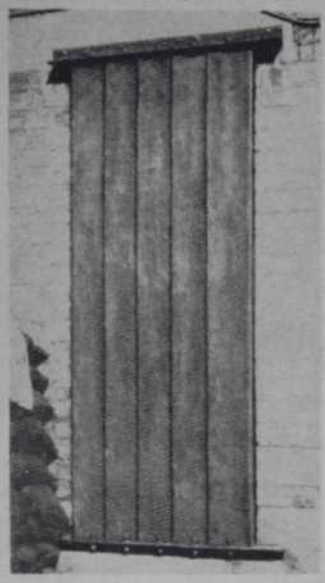
Ads for fewer customers offer a peculiar war-time touch



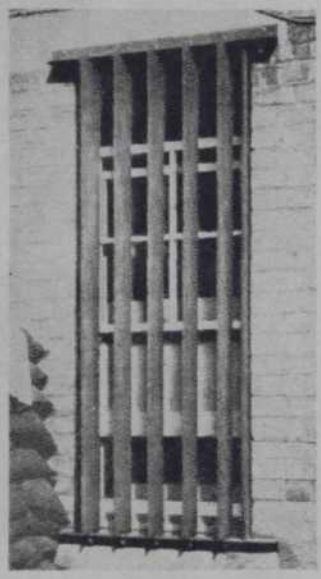
War has not stopped research, technical developments or testing and promoting substitutes



Gallantly looking ahead to the day "lights burn again"



HOPE'S STEEL LOUVRE SHUTTERS



When closed, afford protection against blast and splinter, and also prevent the escape of light at night. They can be opened to admit daylight.

HENRY HOPE & SONS LTD., SMETHWICK, BIRMINGHAM

"Marshal Goering's special brand of unpleasantness" inspires manufacture of a new product



Deliverance . . . and Deliveries

Liberty has been likened to a flame in the darkness . . . a flame now mightily assailed by draughts from the Dark Ages. All of us are preoccupied with the job of shielding it, there's little time for anything else. When the map makers sharpen their pencils and the black curtains go on the bonfire, and the statues come back from the country . . . we shall be glad to talk—as you will to take—deliveries once again.

Butterfield Road Tanks

W. P. BUTTERFIELD LTD.
Head Office: Shipley, Yorks.
Telephone: Shipley 851 (5 lines)

BRANCHES:—
Belfast, Birmingham, Cardiff, Dublin, Glasgow, Liverpool, London, Manchester, Newcastle-on-Tyne, Nottingham.

Nothing to sell now, but the company name will not be forgotten once bombs cease to fall

—and incidentally gaining added experience which will benefit all our users in the future years of peace."

Which comes about as near as one statement by one company could to expressing the spirit that prompts British business to keep right on keeping on "until then."

They are not advertising in search of immediate sales of goods or services. With demand exceeding supply in almost all lines they don't have to. In some cases, indeed, such as some of the announcements of the British railways "Travel *only* when you must," the purpose is to discourage immediate sales.

And yet, to the limit which paper restrictions and the need for national messages from the various Ministries permit, British business keeps on telling its story to the world.

They don't give up

THEY are telling it with a deep pride in keeping things going despite difficulties, and a defiant determination to carry on.

"BOMBED—BUT NOT BEATEN!", one company said in announcing that its food product soon would be "available again." But others, who either can no longer make the goods they used to sell, or whose entire output is being used for national service, and who cannot say that their goods will soon be available again, go ahead with their messages to the public, too.

TO MOTORISTS

PLEASE make your battery last longer

The makers of Exide batteries ask you, in the national interest, to do all you can to make your car batteries last longer. (Those who use radio accumulators can also help.) Keep the electrolyte topped up. Never let the battery get too run down, and never leave it for long in a discharged condition. Keep the surface clean and apply vaseline to the terminals. You will thus be helping to prevent waste of labour, materials, transport, in a time of great need. You can get expert attention for any battery through your local garage (or wireless dealer) from one of the 600 Exide Service Stations.

CARS · RADIO Exide MOTOR CYCLES
BATTERIES

'Still keep going when the rest have stopped'

'DRYDEX' DRY BATTERIES for Radio, Torches, Cycle Lamps, Deaf Aid Equipment, etc.

The Chloride Electrical Storage Co., Ltd., Grosvenor Gardens House, Grosvenor Gardens, London, S.W.1. Telephone: VICtoria 2299. Telegrams: Chloridic, Sowest, London.

W.MOC. 21/40

Patriotic advice, good for country and customer, is common practice

It is the sort of thing which might easily be dismissed as just another example of "business as usual"—which, in these days, is taken to be about the worst thing that can be said or inferred about an industry or an institution. But such a shallow judgment would miss the real meaning of the attitude of British business toward the present and the future, and the advertising with which the two are being tied together.

There is no business "as usual" in Britain these days, and has not been for these many months. A war that has a way of dropping its exploding and incendiary messages right in the home, in what one British advertisement scornfully referred to as "Marshal Goering's special brand of unpleasantness," is too real and too close to leave anything undisturbed. About business, and living, carried on under such cir-

cumstances there can be nothing "as usual" but there can be, and is, something gallant, something that looks beyond the here and now to the time "when the lights come on again."

What do they talk about in these advertisements which have nothing to sell now?

Some of them, the simplest, are what British business calls "maintenance advertising," designed to keep the name of the business or the product green against the day of "Deliverance . . . and Deliveries," the day "when the map makers sharpen their pencils and the black curtains go on the bonfire . . . and we shall be glad to talk—as you will to take—deliveries once again."

Others make frank explanation and apology for the disappointment of their customers, in some such language as that of the manufacturer of footgear who opened with "Sorry Madam—Sorry Sir" his announcement that his output was being taken to meet "Service needs."

Others, faced with shortage, deal with the conservation of materials and apparatus in a way which is beginning to be familiar to American eyes. "PLEASE make your battery last longer," says one company, following up the exhortation with practical pointers on how to accomplish that desirable end.

Research and substitutes

"FOR war on Wheels," another says, "TYRES are of vital importance. MAKE YOUR TYRES LAST LONGER," following with five definite recommendations for the care of tires. Conservation of woollen clothing was preached by a soap manufacturer under the heading, "Wash me gently—keep me nice! Woollens are an awful price!"

Much of the long-range advertising by British business is in the technical and trade press—statements of the fruits of research, the development of substitutes, the new uses of products and appliances, all against the day when once more there will be a market other than the market of war. Producers and fabricators, for example, announce that "wartime conditions impose limitations on present supplies . . . but research looks ahead" to the coming of "the 3rd metal age—Aluminium." Another firm under the topical heading of "This Question of Living Space," devotes itself to a discussion of town planning and "the shape of things to come, architecturally," especially as affected by "aluminium." Cement in its many uses, the special powers of resistance in wired "war glass," building materials of various sorts, ventilating apparatus, the manifold forms and applications of rubber—these and many other products and processes are presented so that the buyers of the future will know them and what they are good for.

Not all British war-time advertising is long-range, by any means, and perhaps not even the most of it. Announcements of food products are widely made, with new slants and twists and substitutions for eggs and sugar and tropical fruits and the like, and with emphasis on what the British call "stand-up meals" to appeal to wardens, firemen, soldiers and others on active duty, and on "shelter-snacks" for the long night raids.

The requirements of life in the air-raid shelters under the shrieks of "Mona and Clara Wailey," the sirens, have created new things and new terms and new uses for old things. Ear stoppers are recommended both as aids to sleep in the shelters during raids and as protection of the ear-drums against the blast and concussion of gun-fire and explosions.



"I think we've just got time for a Hot Bovril, old man."

Hot Bovril cheers!

Never get chilled and depressed. Keep warm and sustained by timely cups of good Hot Bovril. This is the secret of those cheerful, fit folks who greet you with a 'winning' smile.

GET IN A SUPPLY OF BOVRIL *NOW!*

A little humor now and then makes friends, eases tension of war

"SHARE THE SHELTER but don't share the germs!" is the message of a manufacturer of disinfectants "Shelter Boots" of felt for the cold nights, and "Siren Suits," which aren't what they sound as if they might be but are a sort of warm coverall for hasty donning when the sirens sound, are widely advertised. One store suggested them last year as ideal "Blitz-mas presents" for the children.

At the same Christmas season another store struck just the opposite note. Beneath a picture of the entrance-hall of a home, with Christmas greenery hanging in the window but with a warden's steel helmet and greatcoat and a gas-mask hanging on the wall, and firemen's rubber boots ranged beneath, there was published this expressive caption:

"Let's forget about it. . . ."

The home under war conditions, as well as the air-raid shelter, has drawn its share of attention. Various arrangements for better home lighting, heating and cooking have been offered, while the brand-new business of blackouts has created products to match. One firm offers "steel louvre shutters" which can be opened to admit daylight but "when closed, afford protection against blast and splinter, and also prevent the escape of light at night." The more common aids to blacking-out mentioned, however, were colored fabrics lined with dense materials with which it was possible, on the inside at least, to "keep your blackout gay."

Asking public cooperation

THROUGH the continuing advertisements of British business appearing in the publications reaching America there runs, as a sort of common denominator, a pride in what business is doing, an expressed or implied appeal for tolerant understanding of the difficulties under which it is being carried on, and a deep confidence that there will be another day.

As fine an example as any is the consistent joint program of the four great British railways. Nowhere is there a selling talk for immediate business. To the contrary, passengers are urged to "travel *only* when you must." But when you do travel, the British railways hope that you will make understanding allowances for some of the things you may encounter, especially the blackout.

"Has It Ever Occurred to You that the station staff work under great difficulties" at such times, they ask, and won't you help by telling your fellow

(Continued on page 57)

ESSENTIAL

- ESTIMATES
- BUDGETS
- REQUISITIONS
- PURCHASE ORDERS
- VENDORS' ORDERS
- SHIPPING ORDERS
- MATERIAL RECORDS
- PRODUCTION RECORDS
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IN SPEEDING WAR PRODUCTION

Speed in organizing and producing for war requires speed in figuring and writing indispensable records. Everywhere . . . in all branches of the armed services . . . in government offices . . . in ordnance plants, arsenals and other vital war industries . . . Burroughs machines are providing the fast figures, records and management controls so essential to fast, effective action.

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Today's **Burroughs**

DOES THE WORK IN LESS TIME—WITH LESS EFFORT—AT LESS COST



KEYSTONE

The office of 1943 will not revert to this primitive stage, especially in skirts and hair-dos, but it will be different. How different will be conditioned by three things: simplification, economy, substitutes

Shopping for the Office

By FRED DeARMOND

ANY pins, any clips, any pencils today? Yes, enough! But the wise manager will observe a few unaccustomed precautions and economies

BACK in those palmy days of unmarketable surpluses in everything but brains there was a pompous bank president of Scotch ancestry whose habit it was to gather up his dignity about once a week and saunter through the banking rooms, picking up pins and rubber bands from the floor and tut-tutting to the clerks about waste. This eccentricity was a great joke then among employees and junior officers. But in 1942 it would spell efficiency. The "critical list" of office supplies is growing every week.

If you know an office buyer with a self-satisfied smile, he is probably the fellow who opened his mind three months or six months before the affair of Pearl Harbor and listened to the wise counsel of an office supply salesman that he stock up a bit while the stocking was good. The purchasing agent who a year ago scoffed at the suggestion that he order 10,000 wire staples at once now is asking with a "please, sir" inflection for 1,000 and getting 500. Such are the vicissitudes of a seller's market.

Heading the critical list for the office are most things that contain metal, rubber or leather. Unless you have a pedigreed priority rating up in the class with the makers of bombers there's little use in asking for anything that takes much steel. As for new typewriters, there's a clue in the case of the Washington bank that wanted to buy a machine for a girl who had been put to typing applications for defense bonds, and so specified on its requisition. Even with this credential, the

(Continued on page 74)



The dilemma of C. Edward Lasher

C. EDWARD LASHER'S discomfort is the result of having said to himself: "I won't ask an agent to help me plan my life insurance program. I'll do it myself!"

What steps would he have to take . . . what knowledge must he acquire in order to give himself the service and advice he would ordinarily get from an agent?

►First, of course, it is necessary to consider his needs . . . determine how each of these needs can best be met by life insurance. He could do this by analyzing, just as an agent would, how life insurance has met similar problems in thousands of other cases.

Then, he must study the three basic types of life insurance—Whole Life, Endowment, and Term, each with features especially fitting it for certain purposes, and each more or less interchangeable with the others. He would learn that within these three basic types there are many different kinds of policies, each designed to help meet some specific situation.

►Which can contribute most to his family's security? Which will best meet his children's educational needs? Which will build him an adequate retirement income? How much is necessary? Maybe, by using the optional modes of settlement available under the various forms of life insurance, one particular policy will answer all his problems.

Also, before determining costs, he must find the class of risk in which his occupation places him. He should study the various methods of premium payment to learn how he could most conveniently keep his life insurance in force.

►If Mr. Lasher did all these things, he might arrive, at length, at some answer to his personal problem. We think that the deeper he delved, the more likely he would be to seek some expert guidance as to the kind and amount of life insurance he should have . . . *advice which requires the knowledge and experience of a trained life insurance agent.*

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This is Number 47 in a series of advertisements designed to give the public a clearer understanding of how a life insurance company operates. Copies of preceding advertisements in this series will be mailed upon request.

Metropolitan Life Insurance Company

(A MUTUAL COMPANY)

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Washington



and Your Business

★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★

Sing Hey, Nonny, Nonny-----

THE Congressman said that the way Congress is spending money reminded him of a member of the criminal class he once visited in the penitentiary hospital.

"The bullets didn't hurt me," said the criminal, "except when they struck a bone. Even then at first I was only numb."

The Congressman said that at first glance it would seem that Congress had forgotten the value of money. No one speaks of lend-lease any more, he said. It seems to be understood that the United States is to pay the cost of this war from now on. Britain, he said, has spent all she can spend and we must carry on. He was not certain about this, he said, because no one tells Congress anything nowadays, but that's the way it seems. All the money and guns and ships are to be put in a hat and drawn out by the partners as needed. He was not complaining about that, he said. We're in a war.

The Fountain of Dollars

WHAT does disturb him, he said, is that Congress seems to have lost track of what is going on. He had talked with members of the appropriation committees of both houses and they did not seem to know how much has been spent or for how much the Government is obligated. That was quite understandable, but they did not seem to care. Perhaps not all the committee men were in a daze, but the men he talked with seemed kind of befuddled. Every one, he said, is for the prosecution of the war, no matter how much it costs, but the sums involved are so huge that Congress just doesn't understand. Secretary of Agriculture Wickard said that Americans must feed one-fourth of the population of the British Isles, and that is all right, but Congress did not seem to get just what that meant.

"I'm no better than the rest of them," he said. "The only check Congress has had on the Executive is through its control of the purse. It has appropriated so many billions, not all of which can be spent this year or next, that this control has vanished. So Congress is not interested."

Maybe He Was Just Bilious



GEN. W. J. WILGUS called attention to the troubles we will encounter if we attempt to send a really worth while force overseas. Wilgus was Deputy Director General of Transportation in the First World War. Among other decorations he got the D.S.M.

"The active assistance of a friendly people will not be at hand (this time) as it was in France. Hostile ports and ruined means of communication—"

He hopes "the Army's overseas transportation organization will have profited from its experiences in the last war—"

It is not the money-spending that worries Congress, but when men like Wilgus call attention to the size of the job of organization some of its members fret over what has been done. They observe that Britain pulled herself together after Dunkirk because of British criticism of faulty methods.

What, No Nail Polish?

REPRESENTATIVE Ditter of the Appropriations Committee made it clear that "every man in the House is backing up the Government." But he wanted to know about safety razor blades, safety pins, nail brushes and other little items being purchased by the Office of Civilian Defense. The "justification" offered by the O.C.D. in accordance with custom was not accurate. Razor blades were priced at 68 cents a dozen but, on inquiry, the O.C.D. corrected this to 68 cents for 40 blades. Fifty equally good blades can be bought at retail for 46 cents. He found the cost of selling Defense Savings bonds is "considerably higher" than the cost of selling Liberty bonds in 1917-18. Bennett of Missouri objected that "it will take the income taxes of 1,100 married farmers with net incomes of $1,600 a year" to pay the salary of Mayris Chaney, the dancing girl.



Expensive Kennel Rations

PLUMLEY of Vermont was one of several Congressmen to criticise the increase of $16,200,000 asked by the Bureau of Public Debt to set up state organizations to sell bonds. He called the plan "patriotism at a price." Dirksen of Illinois told of the 203,000,000 pounds of paper the Government uses annually. He doubted the worth of the "highly colored, ornamental specialties and novelties on glossy paper." Crawford of Michigan told of copper piping being used in the Government's temporary buildings, when galvanized iron "would last for 15 years and do as well." In all the congressional discussion not one objection was made to spending for war purposes. The chorus of criticism of "national defense being used as a shield and buckler for every Federal pay-roller" is fairly constant.

Sugar Inquiry is Coming

CONGRESSMAN BROWN of Ohio thinks that an inquiry into the so-called sugar shortage is probable.



Return of the Carbon Age

CARBON . . . one of Nature's oldest and most plentiful materials . . . is making possible some of industry's newest achievements.

In the *chemical* industry, massive black towers of carbon . . . erected in incredibly short periods of time . . . speed the delivery of vital acids. The all-carbon electrostatic precipitator . . . built of carbon from the bottom to the top of the stack . . . is now an actuality. Such towers can be erected in as little as a *week's time!* Staunchly immune to corrosion and thermal shock, they should last *indefinitely.*



Today . . . due to basic and applied research into the properties of carbon and graphite . . . it is possible to obtain these black, wonder-working materials in such a variety of forms — blocks, bricks, beams, tubes, pipes, and fittings . . . even valves and pumps . . . that almost any size or shape of structure can be built from them. For making tight joints, which give the structure uniform properties throughout, special carbon- and graphite-base cements have been developed.



Undisturbed by the torture of heat, carbon is also a "must" in the *metallurgical* industry. Carbon *cannot be melted* . . . will not soften . . . and has remarkable dimensional stability even at incandescent heat. In addition, it will not flake off and hot metal will not stick to it. That is why it is ideal for such uses as molds, cores, and plugs . . . for the lining of furnaces . . . and for sampling-dippers.



Because electric-furnace graphite conducts heat even *better than most metals,* it is becoming increasingly important in the manufacture of heat exchangers for the processing of corrosive liquids and gases.

These new uses for carbon and graphite . . . added to the almost interminable list of uses that existed before . . . make this era truly a carbon age. Your inquiries are cordially invited.

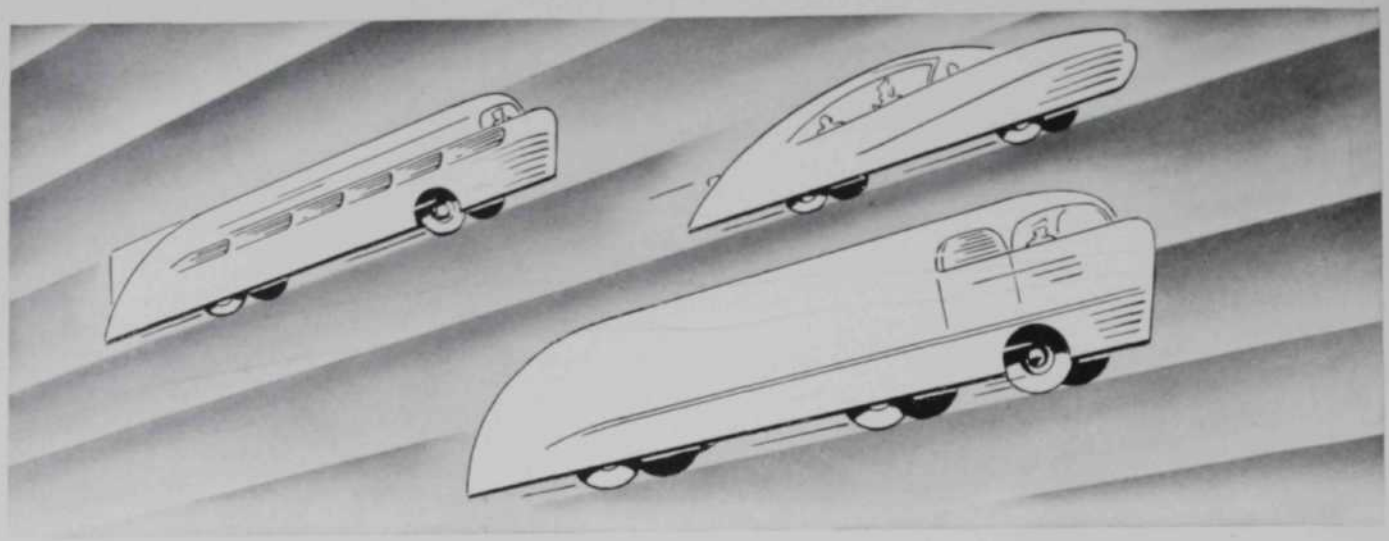
The strides made in the development of structural carbon, and in the uses of other carbon and graphite products, are greatly facilitated by the technical assistance of other Units of Union Carbide and Carbon Corporation including The Linde Air Products Company, Carbide and Carbon Chemicals Corporation, Electro Metallurgical Company, Haynes Stellite Company, and Union Carbide and Carbon Research Laboratories, Inc.—all of which collaborate with National Carbon Company in research into the properties and applications of carbon and graphite.

NATIONAL CARBON COMPANY, INC.
Unit of Union Carbide and Carbon Corporation

UCC

30 East 42nd Street New York, N. Y.

This all-carbon electrostatic precip-



More Comfort in Motor Vehicles Because of



Kimpak

REG. U.S. PAT. OFF. & FOREIGN COUNTRIES

—one of the busiest materials in America!



SHOWING HOW KIMPAK IS INSTALLED IN AIR-CONDITIONED BUSES: KIMPAK is easily cut to the many odd shapes needed for either channel or tubular construction and is quickly installed after adhesive is applied to inside surface of metal walls. KIMPAK is used here because it provides effective thermal and acoustical insulation under conditions of prolonged vibration.

■ In tune with the times, speed and efficiency are the order of the day in production lines. That's why automotive engineers are turning to KIMPAK* for insulating bodies of passenger cars, buses and trucks against heat, cold and noise.

KIMPAK is busy in scores of other industries, too, because it's a surprisingly adaptable material. One type is highly effective thermal and acoustical insulation, flexible and easy to install—which is why it's used by builders of automobiles, and also by makers of refrigerators, air-conditioning units, soft-drink dispensers. Extremely light in weight, KIMPAK is used even for the thermal insulation of airplane fuselages.

Another form of KIMPAK is porous and absorbent, has a low flow resistance — qualities which make it ideal for duty in air filters, for filtering used motor oil to make it "better than new" . . . as well as for many other special processing operations.

KIMPAK gives resilient bulk at low cost, a fact that makes it useful for padding upholstered furniture, leather goods, products such as boxes for candy and cosmetics.

KIMPAK comes specially treated for special jobs: moisture-resistant, moisture-absorbent, abrasion-resistant — even fire-resistant! Furnished thick and thin, in any dimensions required.

Best of all, KIMPAK is *immediately available!*

Would you profit by using KIMPAK in your plant? Find out by getting facts contained in new FREE book "KIMPAK—AND ITS THOUSAND-AND-ONE USES IN INDUSTRY". Mail coupon now!

**KIMPAK (Trade Mark) means Kimberly-Clark Wadding*



KIMBERLY-CLARK CORPORATION (Established 1872)
Neenah, Wisconsin

Send a free copy of the story of KIMPAK to: NB-342

Company _____

Address _____

Attention of _____

If it comes it will be based on charges that (A) there is no real shortage, and (B) that the need for industrial alcohol for war purposes can be served by distilling farm products. A (C) might be added that Leon Henderson's rationing plans will call for the services of 100,000 persons, which is nothing to be snooted at during an election year. Byron Price may have 10,000 censors at work. The (C) may be merely the vaporings of low minds.

Wash and Brush Up?



IN THE good old days London was spotted with toilet stations in which one could get a "wash and brush up" for tuppence. Washington is developing the idea in a more expensive way. The executive heads of two of the greatest industrial organizations parked their bags at the Shoreham, being unable to find rooms anywhere in town, washed their faces and shaved in a room set aside for that purpose, thumbed rides down town with a stranger who had managed to get a taxi, and took the five o'clock train for Philadelphia where hotel reservations had been made. The Government will have 1,000,000 employes more or less hard at work here by mid-summer. Some $40,000,000 worth of desks have been bought. The new War Department building for 20,000 persons will not be half big enough.

Day's Thought for Congress

IF Congress does investigate what people say is not a sugar shortage, or whatever might be the facts in the rubber situation, or the reason why copper can be had but is not being had, it may be hoped that the investigatees will be given a break. No better proof can be had of the essential milkiness of the American character than the manner in which the culprit behaves before a congressional committee:

"How dare you?" bellows a committee member. The business man shrinks into his toecaps. He is not permitted to talk back, have a lawyer, call his own witnesses, find out with what he is being charged, or leave the room. Any witness can defy a bullying committee of Congress and get away with it. Yet the only man who ever did in recent years is Bishop Cannon of Virginia. He just got up and stumped out, going on record while stumping that the committee was composed entirely of noisome jackasses. Nothing ever happened to him, either.

Rations in Everything



LEON HENDERSON seems not to care to talk about it just now, but it appears to be a fact that almost everything is to be rationed in the quite immediate future. Hardly worth while to particularize. Wheat, potatoes, corn, and the bulkier foods may be sold at will but soaps, cosmetics, paper handkerchiefs, clothing, meat, shoes, paints, fuel oil and the like will be controlled. This statement is not news, of course. What is news is that the controlling may begin earlier than is now anticipated.

There are men in the Administration who believe that only by increasing our discomforts to the European level can we be made to take the war as seriously as we should.

A Pedigreed Story

THIS is the genealogy of this story. A United States Senator knows Vice President Wallace very well. A friend knows the United States Senator. The Senator told him:

"Wallace put his hand on my arm in the Senate cloak room.

" 'This morning,' said he, 'I said to the President:

" ' "What if this war lasts through 1944, Mr. President? What will happen then?"

" ' " Don't worry, Harry," said the President. "If I am not President then, you will be." ' "

Thumbs Down on Small Business

SUGGESTION to students of what is going on: get a copy of the report of the Murray committee on what is happening to small business. The report is couched in studiously temperate language.

"We do not want to make a scapegoat out of any one connected with the national defense effort."

But it is indicated that "At no time have its administrators shown proper consideration for the fate of 375,000 small business concerns which are about to be destroyed."

The observation is made that "the policy of those in charge seems to be confined solely to production regardless of consequences."

Floyd Odlum is quoted to the effect that the allocation of as little as one-half of one per cent of the supply of certain scarce materials would have kept thousands of small concerns going while plans were being made to fit them into the national effort. This report rings up a curtain.

We're Not a Critical People



HISTORY shows that in time of war we are not a critical people. We all get behind the leaders and buck the line. But the letters coming in to Congress make it clear that a large part of the public is concerned over the quality of the make-ready-for-war work. More letters have been sent to Congress in other times of stress, but never before—so say half a dozen recipients—have letters shown such a spirit of inquiry. Only passing reference is made to the fact that Congress has appropriated more money than any nation has ever before taken from its people for defense. The letter writers want to know whether this money is being frittered away. There is not even a demand that the nation get its money's worth. There is a fear that the nation is not getting the protection it is paying for.

Five Reasons for Lethargy

THERE is a feeling in Washington that the people have been extraordinarily lethargic. This has never been the case before. We flamed like a bonfire in the Spanish war. In 1917 there was shouting on every street corner. Reports reaching the Capital are that people are going about their business except when and as the war definitely touches them.

Five principal reasons for this have been heard. A radio commentator who has been lecturing through the Middle and Far West says there is a hangover of unfriendly sentiment toward the British. An editor thinks the constant battering of inspirational speeches by our greats has convinced the public that we will win, anyway, and so why worry? A veteran

correspondent suggests that the happy-go-luckiness of O.C.D. has been resented by a public that was ready to assent to any sacrifice. A broadcaster heard complaints of Army and Navy inefficiency. Dockwallopers in San Francisco, for example, reported they can cut ship-loading time in half if not bothered by the Navy, and eastern ports have been closed at sundown by Navy rules, with fuel laden ships helpless victims of possible U-boat attacks in the roadways. A business man said that there are evidences that men high in the war production effort are more interested in "social betterments" than in the fight. There is a general acceptance of the fact that the people are not yet stirred greatly. The Pearl Harbor defeat roused them for a time. Then high authority began referring to it as a "disaster". We're more or less used to disasters. Army and Navy officers are fighting mad. But they are silenced.

Bundles for Business Men

VERY remarkable occurrence noted in the past month. American business men began shooting back at detractors. Council of Shipbuilders reported that charges of improper profits in shipbuilding are—to be open about it—just plain untruths. . . . So Donald Nelson approved the R.E.A.'s seizure of copper for construction of unnecessary distribution lines. . . . So maybe Nelson isn't as tough as people say. Mystery of the Office of Facts and Figures—Archibald MacLeish, administrator—now solved. He is to sit on the vocal heads of Cabinet officers. Betting is five to three Secretary Knox tosses him off. . . . Odd fact that the only one of the propaganda agencies that seems to be winning approval is that of Col. Wild Bill Donovan. It is the only one that desperately avoids publicity. This would seem to be the time for the Farm Chemurgic to surge in and distill alcohol out of leaves and chips. Or what has all the shouting been about? . . . Jesse Jones is speeding up the lending machinery in the R.F.C. . . . For a time he was accused of businesslike methods. . . . Hillman reported to have outtoughed Nelson. He will have more to say about labor in future war production. . . . 1943 transmission of New York City power to up-state war plants may blackout Broadway. . . . F.C.C.'s crusade against newspaper owning of broadcasting stations likely to fold up.

Into the Crystal Ball

PROPHECY runs along familiar lines. . . . Less of everything but taxes. . . . New tax law may be postponed until end of summer. This is election year. . . . Plan is to order "enforced savings" in 1943. Nip from each pay envelope, to be returned after war. . . . Not much doubt about this. . . . So much complaint because Administration is putting bright paint on very depressing war news that censorship may be slacked after a time. . . . But do not make any plans. Byron Price, chief censor, believes in telling the news, good or bad. He may not be let. . . . Army and Navy doing their own buying now. . . . They always did. But for a time they did their buying in a military way. Now they have civilian aids to tell them what's going on. Nelson is cutting his war production job into slices and putting a boss man over each. . . . He has promised to make fewer speeches and not waste so much time chatting with old pals. . . . If the goldfish and corn willie army of 1918 could only see the menu of today's army! Asparagus, all the little fruits, not so much canned applesauce, all the nice vegetables. Well, it's coming to 'em. . . . Labor is demanding a "voice" in administration. Wonder what that has been some of us have thought we heard? . . . Isador Lubin said to be Labor's contact man with the President. . . . Radical, tireless and able. . . . Administration emphasizing need of more man power. Probability that labor will be drafted as needed. McNutt may be the drafter. . . . Lubin reported not to like McNutt. Interesting if true.

Short But Not Merry

MILITARY people in Washington think the Axis will try to put over victory in 1942. Basis of reasoning obvious. Germany and Japan are at their very strongest now. Next year the Allies will be stronger and the Axis will be going back.

Gestapo of the Scrap Piles



SCRAP crusade is being furthered by the Government's camera sleuths. Some of the larger scrap piles were photographed some weeks ago. Recently they have been photographed again. If, in the meantime, the piles have not decreased the owners are in for some bouncing around.

No Wool for Mamma's Pants

WAR BOARD is discouraging the group movement of American womanhood toward tunics and tight breeches. No wool to spare. . . . Small business men reaching Washington inclined to sneer at the report of the National Resources Board about how business is to be saved after the war. "If," say the small business men, "you know so much about it why not save us now?" . . . Secretary Morgenthau said to be unhappy over plan to permit Federal Reserve banks to buy bonds direct from the Treasury. Financial experts say that is the way currency inflation has always started. . . . Maybe Donald Nelson is tough, after all. Reported to have shaken a murderous finger at Thurman Arnold's plan to rouse up a big business concern now doing valuable work for war. . . . *Harvard Law Review* recently carried a couple of pages covering the laws, precedents, decisions and exceptions governing the transaction of business with the Government. After reading, the lay opinion is no soap. . . . Hemp seed is being rationed away from canaries. Obviously we should raise more hemp. But hemp is marijuana which, when smoked, makes the smoker homicidally nutty. . . .

Prophecy for the Day

NEWLY hired government clerks are sitting on each others' laps in the acres of government buildings in Washington. No jobs for them, no chairs to sit on, not room for chairs anyhow. More pour in daily.

One of these days there will be a congressional explosion over the waste of time, money and progress resulting from this packing of the payrolls. Old line bureaus are being moved out of the city so that the largely unneeded newcomers may find room. A boss man is as badly needed in personnel as a boss man was needed in production before Donald Nelson got the job. The prophecy for the day is that nothing will be done.

Herbert Corey



MR. MFGTCH

helps to keep 'em flying

Once upon a time there was a man named Mfgtch. One morning he came down to breakfast and saw by the papers that the world was coming unglued.

"What a mess," muttered Mr. Mfgtch.

When Mr. Mfgtch got to the office, where he was a Little Shot, he called Miss McZqrty over to his desk.

"Miss McZ.," he said, "how many people are there in the United States?"

So Miss McZ., who was good at vital statistics, told him.

"And how much," continued Mr. Mfgtch, "is it going to cost us to lambast the living daylights out of the Nazis and the Nips?"

So Miss McZ., she told him.

"Jeepers!" observed Mr. Mfgtch. "Now then! How much is the cost of doing the lambasting divided by the number of us folks who have got to do it?"



"Just a minute, sir," said Miss McZqrty, who was employed by the firm as a Comptometer operator. And so saying, she went to her desk, and in a jiffy worked out the problem on her trusty Model M Comptometer.

Even as she whisked through the problem, she thought what a marvelous adding-calculating machine the Comptometer is, and how speedily, accurately and economically it handles all sorts of vital figure work.

And as she hurried back to Mr. Mfgtch's desk, she considered what a dreadful jam Management would be in if it were not for figure-work machines in general, and Comptometers in particular.

When she got back to Mr. Mfgtch's desk, she told him the answer.

"JEEPERS!" said Mr. Mfgtch, whose vocabulary was not extensive.

And that noontime, on his way to Hank's Hamburger & Pinball Emporium, he paused at the corner bank long enough to purchase a whopping big United States Defense Savings Bond.

Felt & Tarrant Manufacturing Company, 1712 North Paulina Street, Chicago, Illinois.

Nourish the Right of Assembly

By ROLAND B. WOODWARD

THOSE WHO seek greater powers fear voluntary organizations which "by defending their own rights against encroachments of government, save the common liberties of all"

IF we go back 1,000 years, we find, at the beginning of man's struggle for his economic and political rights, the need for banding together to formulate and assert those rights. We little appreciate how fully all power and privilege were centered in the hands of a few. Against such power, the individual was helpless. It became obvious then, as it is obvious now, that individual effort is not enough. Organized effort is essential to the establishment or preservation of any of the freedoms about which men are concerned.

Men have always connected their daily work with the social and political forces which affect that work. No man can safely just attend to his job and forget the forces which may destroy that job, or make it impossible for him to earn a livelihood. As far back as the most meager records go, we find men who worked as tradesmen or masters, banding together to protect their work and the fruits of their labor. Their chief troubles in olden times lay in the inefficiency, greed, or tyranny of government, and the concentration of power in the hands of overlords or the king.

At the beginning of this organized struggle, the guilds whose members were craftsmen or small business men came into being. The guilds and later, the companies which grew out of them, were banded together for mutual protection against thievery by robbers and highwaymen, or against unreasonable exactions by government. The battle for law and order and for political and economic liberty began in those voluntary groups.

The historical documents which show the economic and social gains made by these primitive organizations of busi-

(Continued on page 77)





SPIKING THEIR GUNS!

American industry is busy today spiking the guns of the foes of freedom.

And in that job you can count the American railroads right up toward the head of the list.

They're hauling more tons more miles per day than ever before.

They're making every piece of equipment do more work than ever before—and are pouring earnings back into more equipment to do their job even better.

That's why we say, one of the biggest spikes in the Axis' guns will be a railroad spike.

They started this "war of movement"—and now they're going to find out what movement really means in the U. S. A.

* * *

APRIL P.S. PERFECT SHIPPING MONTH

Good packing, secure loading and careful handling will conserve time, materials, money, and will help win the war. We can't afford waste now.



ASSOCIATION OF AMERICAN RAILROADS

WASHINGTON, D. C.

The MAP of the Nation's Business

By FRANK GREENE



INDUSTRIAL output forged ahead in January as the nation's manufacturing capacity, under the enlarged armament program, caused some temporary unemployment in the process of conversion. Production of passenger cars ended as automobile plants undertook complete change-over to government orders. Scrap shortages held steel output just under 98 per cent of capacity, while electricity production for January was the highest ever recorded. Railroads benefited by higher passenger rates. Carloadings were 12 per cent above 1941 and the best since 1930.

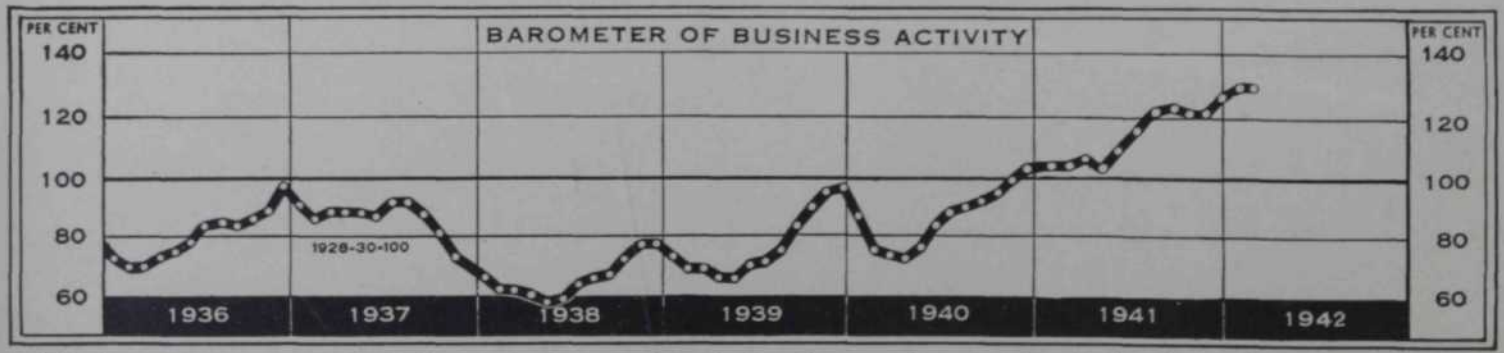
Stock markets were irregular and lower as trading dropped to the smallest for January since 1919, while wholesale commodity prices reached 1929 levels, aided by sharp advances in farm products. Military building offset to some extent declines in engineering awards for private and municipal construction.

Retail sales the country over soared through scare-buying, while wholesale trade was improved by replacement orders due to the buying wave. Bank clearings rose 20 per cent above last year.

The Map again reflects high consumer income, resulting from the combination of higher prices and war-stimulated industrial expansion



The map of last month



The increasing momentum of the country's war effort during January has cushioned the slack which appeared in some lines, and the Barometer chart line remained unchanged at the December peak



WASTED BRAIN HOURS AND HAND HOURS CAN BE SAVED BY

Addressograph-Multigraph Methods

The urgency for maximum production emphasizes the value of methods that avoid lag caused by wasted time. Simplification in the organized use of necessary information can go far toward saving time and speeding results. Such simplification is the keynote of Addressograph-Multigraph methods used for production and allied activities. Brain hours and hand hours are saved. Procedures are co-ordinated. Mistakes are eliminated. Production is increased.

TO USERS OF OUR PRODUCTS: *You are entitled to the services of our Methods Department in helping to extend the use of your present equipment. If you are interested in receiving up-to-date information, it is available to you on request, without charge.*

ADDRESSOGRAPH-MULTIGRAPH CORPORATION • *Cleveland, Ohio*

Addressograph and Multigraph are trade-marks registered in the United States Patent Office





Just HOW *important are typewriters these days? Sometimes Underwoods are installed and in operation before a new working force gets its desks and chairs. In many an office hard at work on contracts for urgently needed war materials, Underwood Typewriters are helping the staff keep pace with the constantly quickening industrial tempo.*

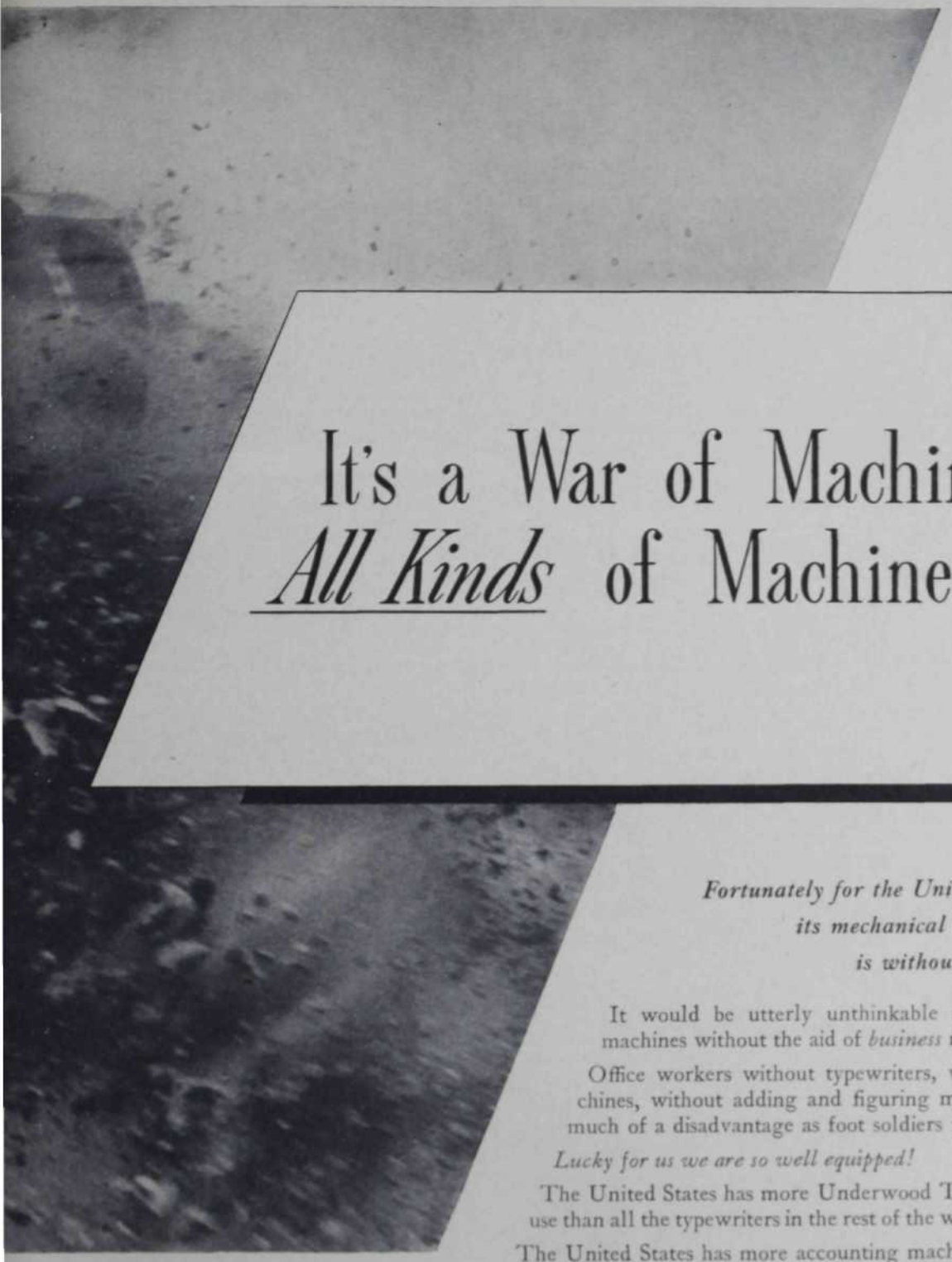


With billions of extra dollars for war materials going into circulation, accounts receivable and accounts payable grow and grow. Ledger postings hit new highs week after week. Bills and orders multiply. And so do all the jobs that make accountants thankful for Underwood Elliott Fisher Accounting Machines.



War today is more and more a matter of engineering and engineering lives on figures . . . on the kind of calculations that the Underwood Sundstrand Adding-Figuring Machine provides so easily and swiftly.

Underwood Elliott Fisher—



It's a War of Machines *All Kinds* of Machines

Fortunately for the United States its mechanical office equipment is without equal the world over

It would be utterly unthinkable to attempt to make *war* machines without the aid of *business* machines.

Office workers without typewriters, without accounting machines, without adding and figuring machines, are at just as much of a disadvantage as foot soldiers facing tanks.

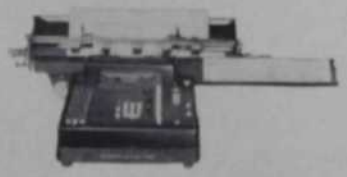
Lucky for us we are so well equipped!

The United States has more Underwood Typewriters in daily use than all the typewriters in the rest of the world put together.

The United States has more accounting machines in daily use than all the accounting machines in all the rest of the world put together.

The United States has more adding machines in daily use than all the adding machines in the rest of the world put together.

In the war of machines this is one of the points where this country STARTS *with an advantage.*



Big munitions plants spring up in open prairies. Day and night shifts operate with thousands of workers who must be paid promptly and accurately. In these and other organizations, Underwood Sundstrand Payroll Machines are doing their bit toward making our vast increase in production possible.

UNDERWOOD ELLIOTT FISHER COMPANY
One Park Avenue, New York, N. Y. *Sales and Service Everywhere*

Copyright 1942, Underwood Elliott Fisher Company

Use Underwood Elliott Fisher supplies for top office machine performance . . . typewriter ribbons, carbon papers, etc.



Speeds the Nation's Victory!

NO BUSINESS *Can Escape* CHANGE

American business does not quit. Its change-over to arms-making is another effort to defend our way of life

1 • MANUFACTURERS are busy making articles for blackout and camouflaging. A few of this month's products are: **A**, a blackout street light producing the light equivalent of a single candle or one hundredth of moonlight; **B**, a blackout compound which is an opaque black heavy bodied adhesive that can be sprayed or brushed and used with fabrics, cheesecloth, or the like to prevent flying glass particles even though the window is shattered; **C**, a dull finish black blackout paint for use on glass applied by brush or spray which can be thinned with petroleum thinners; **D**, a dull finish blackout paint for glass that is resistant to heat from interior of industrial plants, boiler rooms and the like, and is easily removed later with inexpensive solvent; **E**, a combination blackout and camouflage paint in four principal colors; black, smoke gray, earth drab, and neutral brick; **F**, a camouflage paint in such colors as field drab, earth brown, and dark green, which adheres to practically any surface from glass to asphalt roofing and can be used to make wide changes in the appearance of landscapes; **G**, a heavy corrugated paper, black on the outside, for a temporary and reusable window blackout.

2 • SMALL BENCH tools—shear, brake, and bender—make possible the cutting and forming of small channels or angles and bending them as well as strips, tubes, and rods to various shapes. Mandrels for various jobs require only simple lathe or milling machine work and these tools compete readily with dies for short runs.

3 • LENSES for goggles to protect the eyes in fighting incendiary bombs are inconspicuously colored yet absorb all the ultra-violet rays and 88 per cent of the infra-red rays in light.

4 • V BELTS are now made 100 per cent of reclaimed rubber for appliances and automobiles. They are said to give 80 per cent of customary service.

5 • A NEW PAGING system permits paging from any station on the line and an answer with two-way telephone conversation from any other station. Telephone conferences may also be held. The system is also adaptable to general broadcasts through the voice-paging apparatus.

6 • A FLUORESCENT lamp that operates down to zero Fahrenheit ambient temperature has been developed. It is not recommended for high temperatures where ordinary fluorescents work.

7 • A NEW fire retardant for fabrics does not affect the feel or appearance sufficiently to be distinguished yet effectively prevents flaming. After washing the treatment can be reapplied as easily as starching.

8 • A SPONGE is now made of synthetic rubber for dispensing soap suds in barber shops and beauty parlors. It is resistant to the oils in the soap.

9 • A NEW floor-conditioning treatment has a cleaner which removes dirt, grime and grease and neutralizes excess alkalinity in concrete and a resin-base dye-like penetrative coloring which gives a lasting finish.

10 • A CLASS ROOM lecture desk has been developed whereon the lecturer may write on cellophane and have his writing projected onto a large screen either above or below the desk top. The lecturer continues to face his audience. The notes may be saved for review and diagrams may be prepared in advance.

11 • FOR CLEANING floor surfaces exposed to oil and grease there is a compound spread over the floor while dry which absorbs the grease and is anti-skid and non-inflammable.

12 • A TAMPER proof safety and inspection seal is now available printed in colors which serve as an instant indicator of time or other element. The printed disc is fastened in a sealing cup with special pliers and wire; string, or thin cord holds it on.

13 • A SUBSTITUTE for rubber bands is now made of a small ribbon with a ring around the ends. For use the ribbon is slipped around the papers or package and the ring slipped up snug, where it holds until slipped back. It can be used repeatedly, and should not age.

14 • A NEW sealer for cans uses an adhesive tape and handles 40 to 100 cans a minute depending on size. It is expected to be used for tobacco tins, coffee tins, and other cans where preservation of moisture content or freshness is important.

15 • A NEW type theater chair is so designed that it will use considerably less metal than the scrap in the chairs it may replace. It will be available in a wide variety of designs and color combinations.

—W. L. HAMMER



16 • AN automatic water purifying unit of relatively small size —capacity 1200 gallons an hour—can be installed on any tank or container or for field use uses a 250 gallon canvas bag. Operation is entirely electrical—no chemicals are used. It produces clear, odorless, tasteless water.

EDITOR'S NOTE—This material is gathered from the many sources to which NATION'S BUSINESS has access and from the flow of business news into our offices in Washington. Further information on any of these items can be had by writing us.

"It Will All Come Back . . ."

(Continued from page 40)

passengers the names of the station, by closing the carriage door after you, and by not running up the blinds? And won't you remember, please, that

the Railways have little or no surplus margin of food for unexpected guests in their Refreshment Rooms and Dining Cars . . .

But along with this note of polite apology, there runs through the British Railway advertising, as through that of British business, a fierce pride in what they are doing. Under the heading "O. H. M. S."—talismanic letters which to the Britisher mean "On His Majesty's Service"—three blacked-out trains rush through the night bearing "Food," "Munitions," "Troops," with this explanation:

British Railways are anxious to provide complete services for the public. National duties may prevent them running all the trains which you, and they, might wish, but please be indulgent . . . remember *National needs MUST come first.*

This is not a story of advertising in war-time Britain. If it were, it should include much about the way the various Ministries and national agencies for the prosecution of the war are using it as a direct and essential part of the British war effort. This is the story—a little bit of the story—of what British business is doing to keep things going and to keep life sane, and of how it is using advertising in that effort.

Being British, much of the material used is touched with a quiet sort of humor. One has to look twice to get the full force of the cartoon ad over which all Britain chuckled—two members of a Delayed Bomb Disposal squad approaching Alf's Snack Bar, with the remark, "I think we've got time for a hot Bovril, old man." The second look at the picture shows the cause of Alf's consternation and that of the cross-eyed pooch rapidly leaving those parts—in the background, a huge unexploded bomb roped to the bed of the lorry which the nonchalant bomb-disposers have just left to sneak hasty refreshment.

In contrast with the humor of such pictures is this austere typewritten announcement of the publishing house of Blackwood:

On the 20th Dec. 1840
Messrs. Wm. BLACKWOOD & SONS
opened the London Branch of their publishing business, founded by William Blackwood in Edinburgh in 1814. A hundred years and nine days later their office at 37, Paternoster Row, E. C. 4, was destroyed by enemy action.
RESURGET
Until other arrangements are made all orders for and correspondence relating to their publications and to
BLACKWOOD'S MAGAZINE
should be addressed to their Head Office at 45, George Street, Edinburgh.

There's the spirit of British business, "bombed but not beaten": *Resurget!*



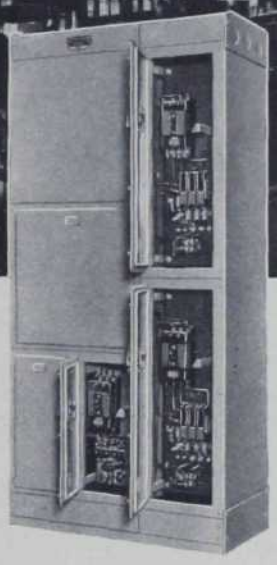
. . . OF VITAL IMPORTANCE TO PRODUCTION TODAY

With every moment of time, every foot of production space, every work unit of manpower of such vital importance, look to Unitrol to wipe out the problem of handling, housing and using Motor Control.

1 Unitrol simplifies and speeds up the installation of Motor Control whether *inside* a machine, *beside* a machine or in a control center serving an entire plant or department.

2 Unitrol simplifies and speeds up the addition, change, replacement and servicing of Motor Control. It makes control always easily accessible . . . separates control from machine, maintenance from production. It keeps control abreast of changing needs.

3 Unitrol cuts down the space required by Motor Control . . . enables you to get more than double the amount of control in the same space . . . may even make plant extensions unnecessary.



Unitrol is a *better* method of mounting, housing and *centralizing* Motor Control . . . *from individual unit to* complete plant-serving control center. Made from standardized parts, complete at every step of way. Easy to install, demount or change.

The complete Unitrol story is told in the book "Unitrol . . . the next step forward in Motor Control progress." It's yours for the asking. But send for it *today*. CUTLER-HAMMER, Inc., 1251 St. Paul Ave., Milwaukee, Wisconsin. *Associate:* Canadian Cutler-Hammer, Ltd., Toronto.



Individual Unitrol mounting frame is *better* for machines with built-in Motor Control. It eliminates many machining, wiring and assembling operations.



The complete Unitrol Control Center houses all the control in the plant, for easy, speedy man-power-saving installation, maintenance, change, expansion or curtailment. No wall or floor preparation.

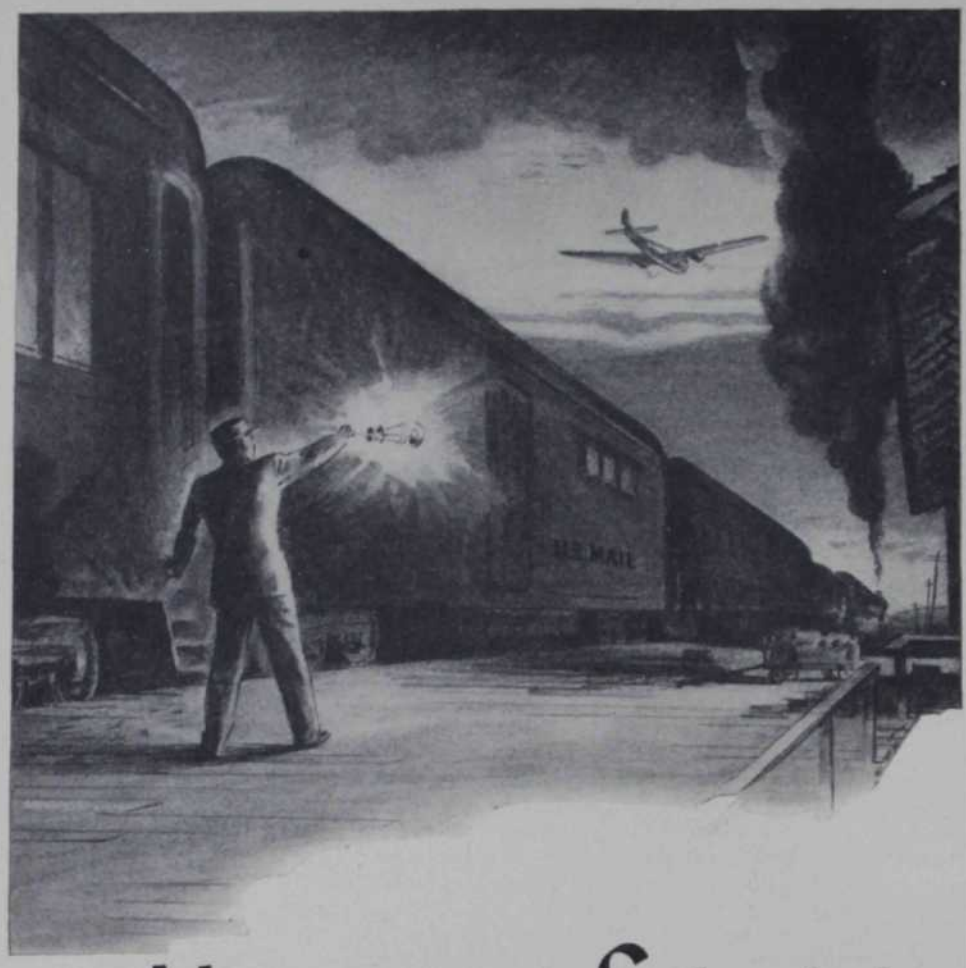


The individual Unitrol *Section* houses Motor Control for several motors or motorized machines, is compact, space-saving, convenient and economical.

CUTLER-HAMMER
UNITROL
C-H

Copyright, 1942, Cutler-Hammer, Inc.

1892-1942 50th ANNIVERSARY



MAIL moves on Schedules —which your mail must meet!

Trains and planes can't wait on your office boy or stenographer. A little time lost after a letter is signed—may be a lot of time lost before a letter is delivered. Not even letters can afford to loaf these days!

The Pitney-Bowes Postage Meter *prints* postage on letters faster than anybody can stick printed stamps; seals envelopes at the same time, gets mail out of your office sooner... Metered mail gets through the postoffice faster, and on its way earlier—because it doesn't need to be faced, cancelled or postmarked. And metered mail often meets schedules ordinary mail misses!

Saving time and effort in thousands of offices and postoffices, the Pitney-Bowes Postage Meter is indispensable to both government and business today . . . Saves postage, too; does its own accounting... does away with the old-fashioned stamp box which exposes adhesive stamps to germs, waste, loss and theft . . . Every business, large or small, needs the Pitney-Bowes Postage Meter today—and there is a postage meter for every business. Our branch offices, located in principal cities, are at your service.

Pitney-Bowes POSTAGE METER CO.

Branches in principal cities. See telephone directory. In Canada: Canadian Postage Meters & Machines Co., Ltd.

1339 Pacific St., Stamford, Conn.



Air Conditioning Goes to War

VERSATILITY of peace-time industrial developments in war service is demonstrated on many fronts, is eloquently exemplified by contributions to perfection of nation's military might.

Navy submarines are air conditioned for crew's health and operating efficiency. When a vessel is submerged in tropical waters or in summer, temperature may rise to more than 100 degrees and humidity may increase to dew point.

Air conditioning in gun turrets removes powder fumes and keeps temperatures at reasonable level. Purpose is to maintain split-second team work of gun crews. In powder magazines a careful range of relative humidities is maintained to minimize danger of explosives from static sparks and other causes.

Among the Army's items of active service equipment are air-conditioned tanks, air-conditioned mobile photographic dark rooms, air-conditioned mobile laboratories, and air-conditioned mobile hospitals.

The aircraft industry relies on air conditioning to control humidity and temperature conditions.

Health and morale of workers must be safeguarded so that assembly lines may not slow down. In midsummer heat and biting winter cold, whether there is rain or sleet or snow or a dust-laden summer windstorm outside the factory, air conditioning brings to those ever-busy airplane workers fresh, clean air, tempered to induce better physical health and mental keenness, offsetting strain of long hours of exacting labor.

Men in air-conditioned factories are turning out tanks, guns, and other fighting equipment in which closely-fitted, highly-machined parts, true to almost microscopic tolerances, must work accurately and efficiently. These weapons must be fashioned under conditions of uniform temperature and humidity. Variations of temperature may cause expansion or contraction of metal components and of tools and gauges, thus blocking the flow of vitally-needed arms.

In respect to steel production, air-conditioned blast furnaces increase pig-iron output by as much as 20 per cent, with a 13 per cent saving in coke per ton of iron. In the mining of ore—particularly copper—air conditioning is also a major factor. One example is the Magna Copper Mine in Arizona. Ordinarily this mine would have had to be abandoned, because at its 4,600-

foot depth the temperature ran as high as 150 degrees. But air conditioning brought that temperature down to 90 and the mine continues to produce large quantities of copper.

Industrial diamonds are essential to volume output of war materials. Dearth of skilled cutters has restricted production. Humidity is also a problem. A diamond saw won't work in wet, muggy weather.

In the manufacture of cameras and photographic film, range finders, telescopes, bomb sights, chronometers, and other delicate equipment essential to operations of the Army and Navy, air conditioning is as indispensable as highly-skilled workmen. The delicate machining and adjustments, the scrupulous cleanliness of the components can be obtained only if temperature and humidity are closely controlled and dirt minimized.

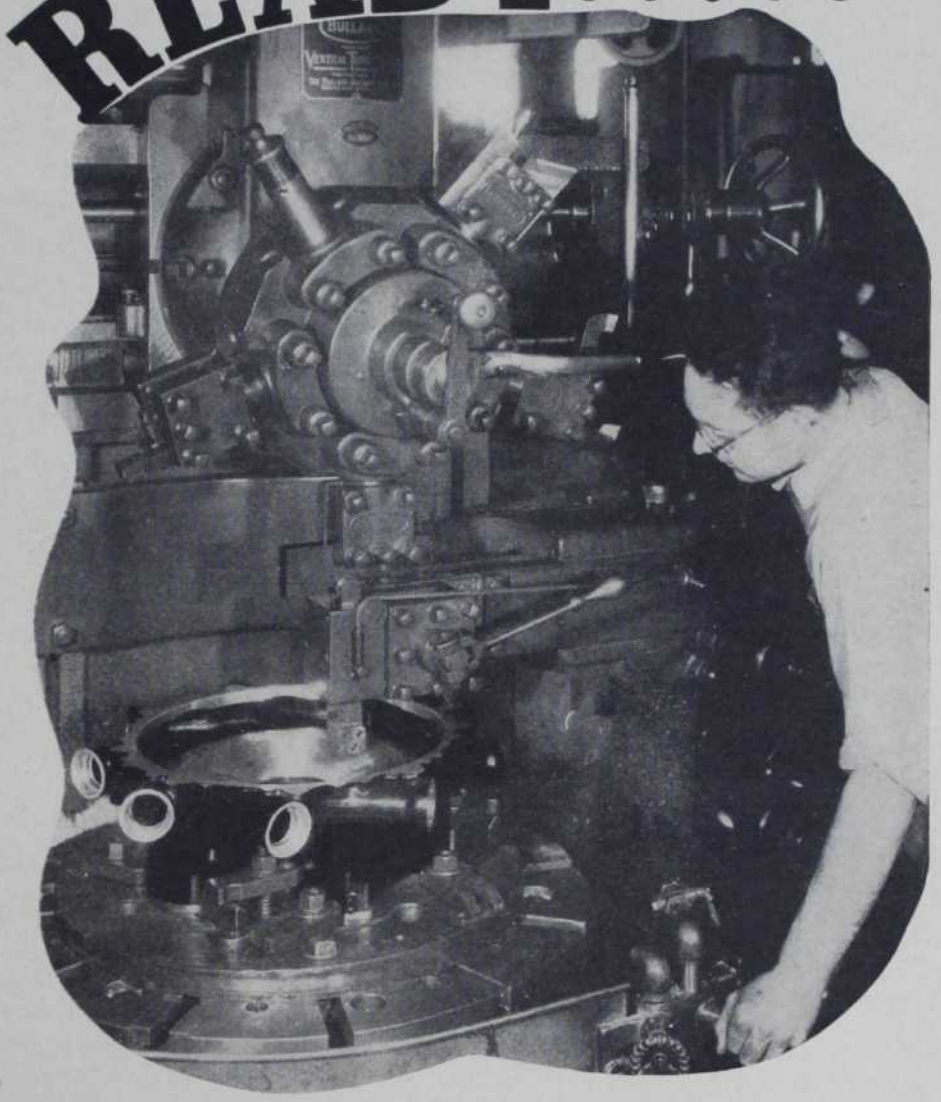
Artificial weather for testing

IN testing and research laboratories, air conditioning is most important. Military equipment is rigorously tested under simulated weather conditions of all kinds. Closely observed is the reaction of metals, lubricants, plastics, and completed weapons in temperatures ranging from 100 degrees below zero to 150 degrees above, in wind velocities exceeding 100 miles an hour, in relative humidities approaching the dew point. Provision is made to eliminate failure of materials and equipment under extraordinary operating conditions. Purpose is to assure that fighting tools will function smoothly and effectively, even under the most trying weather conditions. Air conditioning is needed in the laboratory not only to test actual fighting gear, but also to test other indispensable military materials, such as concrete, paints, explosives, chemicals, medicines and drugs, motor fuel and lubricants.

Air conditioning is essential in the manufacture and loading of depth bombs, projectiles, and mines. It is needed in the fabrication and loading of fuses for high explosive shells. It helps produce black and smokeless powder and other high explosive chemical mixtures.

In the weaving of woolen and cotton fabrics for military clothing, in the manufacture of synthetic textiles such as rayon and nylon, air conditioning has earned its place. Other war-time uses, according to William B. Henderson, Executive Vice President of the Air Conditioning and Refrigerating Machinery Association, appear in manufacture and storage of parachutes, packing and storage of serums and vaccines, storage of bombs and explosives, manufacture of synthetic rubber.

THE MACHINE THAT WAS READY.....



TODAY, it's "War Work" here. But back in 1938 there was war work in England, France, Russia and other European countries. And, because British Armament producers recognized the universal adaptability and productive ability of Bullard Vertical Turret Lathes, thousands are at work in England today.

Likewise, American tank, truck, airplane engine builders and shipyards recognize these qualities, and our war time production is demanding unheard of numbers of Bullard machine tools.

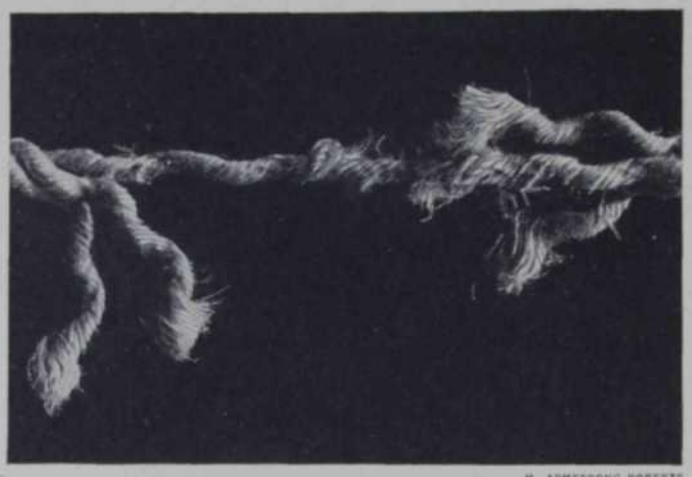
When the war is over, the same universal adaptability will give Bullard V.T.L. owners a sprint start on peacetime production.

THE BULLARD COMPANY
BRIDGEPORT, CONNECTICUT

BULLARD

We COULD Lose This War

By E. E. COX, Congressman of Georgia



N. ARMSTRONG ROBERTS

WHAT will the boys who return from the war—those who do return—say if the Government does not take this job more seriously? No divided nation can be a victorious nation. United we stand, divided we fall is as true today as when it was first uttered in 1776

UNITY of purpose and action, accompanied by high morale, is essential in success in shop and factory. No one but a fool would say that unity is not only essential, but indispensable to win a war of the present dimensions.

Morale can be inspired. It can be destroyed. Some of the things being done in the name of unity and morale jeopardize unity, and weaken morale. Every one in Congress—and out—recognizes there is a lack of unity and high resolve in the nation today.

We are at war! We are at war in all of its tragic implications. The fate of the country—its future—is involved. The country can be united on the imperative, the desperate need to win the war at whatever sacrifice. We shall require all the unity possible for the achievement of that objective. Unity for prosecution of the war is enough for the duration of the emergency.

The danger to unity is the disposition of those in high positions to promote "causes" under the guise of emergency. They are quick to charge those refusing to accept their philosophies with destroying the unity necessary to the prosecution of the war. But any person who deliberately uses war for promotion of any cause not directly connected with war is guilty of disservice to the country and contributing to disunity. The country can unite on war, but there are a lot of things upon which it cannot unite. Such things must be postponed if we are to win the war.

One way to destroy unity is appointment to high position of men and women whose records raise the question of their patriotism or fitness. Out of 130 million people it is possible to find persons capable of occupying responsible positions, against whom no question of loyalty or capacity has or could be raised.

Last minute conversion of some of those who have been signally honored may be genuine. It is hoped that it is. But there are those who do not believe in death-bed repentance. They should not be offended by exalting the new convert over the faithful.

Possibly Joseph Lash wrestled with the spirit, renounced his communistic activities, and should have a commission in the intelligence department of the Navy as a reward. However, there are those who hold that if his conversion is genuine it would be meet for repentance if he should wait his turn to be called by his local draft board. Millions of American boys whose patriotism has never been questioned are doing that. Morale would not be strengthened in quarters familiar with the record of Mr. Lash, if he were in a highly confidential position where the safety of the boys in the Navy is involved.

It may be that Edouard Hesselberg, known to motion picture fans as Melvyn Douglas, should be recorded in history as one of the great American patriots. It is possible that his service, whatever it is, in the Office of Civilian Defense, is outstanding. Yet there are a lot of persons who believe someone could have been found to do the job as well whose Americanism could not be questioned. Morale and the cause of unity are not strengthened by the selection of Mr. Douglas, whose name has been associated with Earl Browder and Tom Mooney, and whose appointment as a colonel in the intelligence department of the California National Guard was withdrawn as a result of the protest of members of the American Legion.

No personal criticism is made of Miss Mayris Chaney, selected for an important rôle, important from the standpoint of salary, in the Office of Civilian Defense. Miss Chaney has a record of successful career as a night club entertainer. She has the more politically important distinction of having invented the "Eleanor Glide" which attracted favorable attention of high governmental officials. Miss Chaney's assignment is to teach children to dance, and otherwise amuse themselves during air raids. The question is whether or not too much emphasis is placed on the brighter and lighter side of bombings, and if her salary might not be used more effectively in providing an anti-aircraft gun. The mere suspicion that official authority has been used to reward personal favorites is not a contribution to national unity.

Donald Duck, salesman

IN order to encourage purchase of defense bonds and develop a happy-go-lucky attitude in making out income tax returns, the Treasury conceived the idea of a "Donald Duck" motion pic-

(Continued on page 67)

THE HOME INSURANCE COMPANY
NEW YORK

STATEMENT • DECEMBER 31, 1941

Admitted Assets

Cash in Banks and Trust Companies	$ 24,287,805.05
Bonds and Stocks	85,493,204.48
First Mortgage Loans	365,492.00
Real Estate	3,841,678.13
Premiums uncollected, less than 90 days due	8,257,964.53
Reinsurance Recoverable on Paid Losses	1,512,109.67
Other Admitted Assets	218,518.25
	$123,976,772.11

Liabilities

Capital Stock	$15,000,000.00
Reserve for Unearned Premiums	59,351,273.00
Reserve for Losses	9,658,743.00
Reserve for Taxes	2,350,000.00
Reserve for Miscellaneous Accounts	667,419.82
Funds Held under Reinsurance Treaties	127,883.25
Reserve to Adjust Security Valuations	531,600.00*
NET SURPLUS	36,289,853.04
	$123,976,772.11

*Represents the difference between total values carried in Assets for all Bonds and Stocks owned on basis prescribed by National Association of Insurance Commissioners and total values based on December 31, 1941 actual market quotations.

Securities carried at $3,126,823.00 and cash $50,000.00 in the above Statement are deposited as required by law.

Directors

LEWIS L. CLARKE — WILLIAM S. GRAY — CHARLES G. MEYER — WILLIAM L. DEBOST
WILFRED KURTH — EDWIN A. BAYLES — GORDON S. RENTSCHLER — ROBERT GOELET
HERBERT P. HOWELL — MORTIMER N. BUCKNER — FRANK E. PARKHURST
GEORGE MCANENY — GUY CARY — HAROLD V. SMITH — HARVEY D. GIBSON

FIRE • AUTOMOBILE • MARINE and ALLIED LINES OF INSURANCE

STRENGTH • REPUTATION • SERVICE

RED CROSS WAR FUND—*If you can't go . . . Give!*

Price Control on Main Street

SCARCELY anyone denies that price-fixing and rationing are necessary in war time, but most folks are poorly prepared to understand how their own lives may be affected. Here are a few examples of how it will affect you

DON'T GET the idea that the Emergency Price Control Act will set an immovable ceiling over prices. Even Mr. Henderson has said that it is only a "brake" to prevent prices from suddenly skyrocketing to heavenly heights.

The present Act will *not* prevent rising prices. Chances are that prices may go to the sky but the rise will be more comparable to that of a slow balloon than a 400-mile-an-hour airplane.

It looks now as though the Act would limit profits, but not the cost of living. Exemptions of commodities now below parity, wages and transportation cut into its foundations.

Tomatoes might serve as an example. The Government has already set a minimum price for canners to pay growers. If the canner can't make a profit at that price he gets permission to raise prices to distributors. They raise the cost to retailers, who in turn petition for a cent or two more on the consumer price. Net effect is that the consumer pays more while the retailer maintains his one or two cent profit. In other words, the business man's profit is limited, but prices go up anyhow.

Then along comes organized labor with a demand for higher wages because the cost of living has gone up. Employers working on war orders are likely to meet the demand without protest because they reason that Government is paying the bill anyhow. So Whee-ee-ee goes the spiral and ceilings become as multiple as a guinea pig's litter.

How to administer and police the Act with least confusion is probably as much a headache to Mr. Henderson as it is to business men who are on the receiving end.

At present there are some 2,000 employees in the Office of Price Administration—nobody can tell how soon there may be 5,000 or more. In addition, there are six regional offices with six more being organized. There are 9,000 rationing boards under O.P.A. jurisdiction (at least one in every county) with at least 27,000 voluntary and paid employees.

Rumors have been flying that O.P.A. would set up huge staff offices in every city with employees whose business it would be to ferret out all violators of the Act. A spokesman for O.P.A. refused to confirm any such rumor. He said there were at present 150 employees in the New York office, but that figure didn't mean anything because there would soon be more. An observer might guess that some of them would be used for snooping, but theoretically their duties are largely devoted to administering what may well become a more complex welter than the old N.R.A.

According to the statute, Mr. Henderson doesn't have to depend on his own staff to police the Act. He

> may utilize the services of federal, state and local agencies and may utilize and establish such regional, local or other agencies, and utilize such *voluntary and uncompensated services* as may from time to time be needed.

Help from other agencies

UNDER that phrase, in war time, he could compel almost any group or single person to help him carry out his function and duties as he sees them. He has already used investigators of the Wages and Hours Administration to check on tire dealers, but denies that this sets any precedent for using them again. He could use the 90 price investigators of the Labor Department and all the hundreds of inspectors in other government agencies together with the Agricultural Department's vast county agent system if he wished, but his aides do not think it will be necessary. They are depending more on popular opinion to report violations of the Act than on Government policemen.

When questioned on this point, an O.P.A. official said:

> Business men on our industry committees have their own price watchers—people who are paid to find out what competitors are charging—certainly they can be expected to report if any price violations are evident. Then there are organizations like Rotary, Kiwanis and the like who might help. Individual citizens or business men could easily report any violation to one of the O.P.A. local offices. We anticipate no trouble in getting reports on price violators.

He was careful not to mention women's clubs. Their use as voluntary watchers for Mr. Henderson is not yet clear. When Miss Harriett Elliott moved out of the O.P.A. consumer division last fall, it became almost an orphan. Dexter Keezer, former head of N.R.A's consumer division, has just taken over command but it is too early to prophesy what he will do in organizing the potential woman power available for policing the Price Control Act, if anything.

But the Office of Civilian Defense has a consumer division that might burst at the seams any day. It has taken over the orphaned Consumer Information Centers which Miss Elliott set up in many cities. The Centers are largely controlled and operated by prominent club women. Their chief duty at present is to provide "Libraries of Information" for consumers and to train picked personnel to act as leaders in discussion groups.

The "Libraries of Information" so far consist largely of government bulletins drawn in great part from the Departments of Labor and Agriculture. One woman said they would use material from Consumers Union when government information was unavailable. They look with disfavor upon material from private industry for fear they might be accused of showing partiality to one firm over another.

The discussion leaders are trained to teach consumer responsibility; warn against inflation; tell what goods are standard according to government specifications; suggest substitutes for scarce or high cost items; how to read labels on canned or dry goods. They emphasize subjects on nutrition with such slogans as "not a calory without a vitamin" which is of particular significance to processors who make products with a high sugar content.

A further task which the Consumer Centers have in mind is to borrow some

(Continued on page 72)

MASTERPIECES
OF FOOD ADVERTISING

are printed on *Levelcoat** Printing Papers



STRONGLY conscious that conservation of paper is important to national welfare, food manufacturers and packers are keeping a watchful eye on the performance of their direct advertising. Today, each recipe book, circular and brochure must *work!* Color illustrations must excite the appetite . . . type must be printed clear-cut for easy reading. And the paper itself must be super-smooth to assure these results.

Food product manufacturers, like many other advertisers, turn to super-smooth Levelcoat* printing papers for the qualities that help to put drama into printed advertising.

You, too, can boost the appearance and the sales-power of *your* direct advertising with Levelcoat printing papers and do it at little if any extra cost, *because Levelcoat papers provide all the beauty of costly printing papers at a price you can afford!*

Levelcoat papers are for every type of letterpress printing. For free sample book showing Levelcoat printed results address our nearest office or ask your paper merchant. If you have any special paper or printing problems, a Kimberly-Clark technician will be glad to help solve them. Call, write or wire for quick, courteous service.

Compare Levelcoat Quality!

A

"A" is a diagram of greatly enlarged edge of old-style manufactured printing paper. Compare with "B".

B

"B" is a diagram of greatly enlarged edge of sheet of Levelcoat paper. Note the comparative smoothness of Levelcoat paper. This smoothness is obtained by *new and exclusive* processes and is the secret of the unexcelled printed results obtained with Levelcoat printing papers.

Trufect* For Highest-Quality Printing

Kimfect* Companion to Trufect at lower cost

Multifect* For volume printing at a price

Levelcoat Papers

KIMBERLY-CLARK CORPORATION, *Manufacturers* • *Established 1872* • **NEENAH, WISCONSIN**

NEW YORK: 122 East 42nd Street • CHICAGO: 8 South Michigan Avenue • LOS ANGELES: 510 West 6th Street

*TRADE MARK



One of a series illustrating Cyanamid's many activities.

. . . and one to grow on

Long ago a baker tossed in an extra roll —and the tradition of the baker's dozen was born. Today that tradition is being carried out in a more scientific sense by the enrichment of flours and bread with some of the components that make up Vitamin-B Complex, rich source of health-giving food values.

Complex, indeed, is the word for this vitamin group. It is composed of several important vitamins commonly found in well-balanced diets. But well-balanced diets are not available to everyone. So science is using the health and morale building factors of the Vitamin-B Complex to reinforce the qualities of the foods that *are* available to everyone.

Bread is ideal for the purpose because of its low cost and wide distribution. Thus the miller, the baker and many other manufacturers, too, are cooperating with the Government and medical science to help keep a nation in trim by giving people something *extra* to toughen up and grow on. For vitamins not only build health but prevent diseases caused by deficient diets—extremely important for our national morale.

One of the important components of Vitamin-B Complex used to "enrich" bread is Nicotinic Acid, which is also used in curing pellagra, a nutritional deficiency disease. American Cyanamid was among the first to develop Nicotinic Acid, and is today one of the world's large suppliers. Here is another instance in which Cyanamid's modern research and manufacturing facilities perform a public service.

American Cyanamid Company

30 ROCKEFELLER PLAZA, NEW YORK, N. Y.

MOLDING THE FUTURE THROUGH CHEMISTRY

(Continued from page 32)

have been rejected by the draft boards. I append a suggestive list:

NAME	REASON FOR REJECTION
George Washington	False teeth
Bismarck	Overweight
Napoleon	Ulcer of the stomach
U. S. Grant	Alcoholism
Julius Caesar	Epilepsy
Horatio Nelson	One eye, one arm
Oliver Cromwell	Precancerous dermatitis ("Paint in the wart")
Mohammed	Fugues
Frederick the Great	Postural kyphosis, suicide obsession
Alexander the Great	Oedipus complex
Charles XII	Tuberculosis
Kaiser Wilhelm	Withered arm
Genghis Khan	Paranoia
Duke of Wellington	Underweight

Good health is widespread

PRESUMABLY if the average United States citizen were asked to name a population group in which, because of economic level of living, carelessness, ignorance and lack of training the health level would be at the lowest he would readily agree in naming the negro sharecropper of Mississippi. It happens that a study of just this group from the viewpoint of physical fitness is available. (See D. B. Dill—"Fatigue Studies Among Mississippi Sharecroppers." *Harvard Alumni Bulletin,* October 20, 1939; and J. W. Thompson—"The Clinical Status of a Group of Negro Sharecroppers." *Journal* of the American Medical Association, July 5, 1941. See also Correspondence, in the *Journal* of the American Medical Association, December 6, 1941.)

The report dealt with male negroes between the ages of 17 and 24. "The two serious diseases which were found prevalent in the histories of the negro sharecroppers were gonorrhoea and malaria." To control malaria requires hard, technical, continuous work. It is not a job for the limelight, and while doing it one does not have time to be photographed in front of a lot of health posters.

Only one out of the 24 subjects studied was unable to do hard work. In weight, the group was ten per cent under ideal, but in explanation it should be remembered they did hard work all day long—they did not lead a sedentary life. And the crucial test is that their performance of hard labor "would be the envy of those desirous of being fit."

As to the state of the national nutrition, I can speak to a certain extent from first hand information. When Surgeon-General Parran made public his famous calculation that 40,000,000 Americans were suffering from a state of semi-starvation, or hidden starvation due to vitamin deficiency, the figure challenged my attention and that of several of my professional colleagues.

We subscribed entirely to the idea of the physiological necessity of the vitamins, and we thought the public should be instructed in the knowledge of their necessary inclusion in the diet and in what foods contained vitamins. But we were forced to assume that the public in general was getting its vitamins because we nowhere saw any widespread indications of vitamin deficiency. In fact we hardly saw any vitamin deficiency at all.

For more than ten years I was attending physician at the Kansas City General Hospital and had on my service an average of 1,000 patients a year. These patients were from the lowest economic strata. Yet in that time I can remember seeing just three cases of pellagra. My colleagues and I attend an outpatient clinic where we see about 80,000 patients a year, all underprivileged so far as economic status is concerned, therefore the fittest subjects for malnutrition. Yet malnutrition of all sorts is conspicuous by its absence.



In 1917 the machinery for examining draftees was lax. Thousands with tuberculosis were accepted

Therefore we viewed Surgeon-General Parran's figures with some skepticism.

To check on whether our experience was duplicated elsewhere I wrote to a number of large institutions all over the country—such as Johns Hopkins Hospital, also the Massachusetts General Hospital, and the Santa Barbara County Hospital. When the figures came in, we found the universal experience was that cases of vitamin deficiency over the past three years in these institutions constituted about 0.24 per cent of all admissions. This would mean about 115,000 cases of semi-starvation a year in the United States instead of 40,000,000. But this was in the hospital population of the sick and very sick.

It remained to survey a group of persons in good health and on a very average economic level—neither low nor high as regards their ability to obtain food in good quantity and their mental alertness in selecting protective (vitamin and mineral containing) foods. I enlisted the intelligent aid and cooperation of Dr. J. G. Schnedorf, physician to a large industrial plant. He consented to make an unselected survey of the employees with particular reference to the existence of malnutrition, hidden starvation, or vitamin deficiency.

Vitamins

DR. SCHNEDORF and I were aware of the recent suggestions made that the "hidden starvation" referred to did not show itself in full-blown examples of vitamin deficiency such as pellagra, scurvy, rickets, ariboflavinism, night blindness, xerophthalmia, and the like, but in what was called "sub-clinical vitamin deficiency." Therefore we went over the literature of sub-clinical vitamin deficiency together and, on the basis of these descriptions, we prepared a questionnaire which included all the symptoms of sub-clinical vitamin deficiency, and also a questionnaire which included eating habits.

This long questionnaire combined with a complete physical examination designed to bring out vitamin deficiency and a laboratory blood test for vitamin C (the most reliable and practical blood test for any vitamin deficiency) was applied to 300 unselected consecutive employees with the result that not a single instance of vitamin deficiency or hidden starvation was uncovered. A more casual examination of more than 1,200 other employees failed to disclose any instance of vitamin deficiency.

WHEELS



Today, armies on wheels set the swift, terrible pace of war. The wheels of American industry are rolling — to win this war. They will continue to roll — faster and faster, to break all world speed records in the production of the greatest volume of mechanized fighting equipment the world has ever seen.

In the winning of the war, the wheels of mass transportation — the American railroads — are indispensable. For theirs is the job of the mass movement of vast quantities of war materials and great numbers of armed forces throughout the wide expanse of the land. They did the job in 1939. They did it again in 1940. And in 1941, they handled the biggest transportation load in history — more traffic than in the busiest year of World War I; more than in the peak year of 1929 — smoothly, efficiently, and without car shortages or congestion. And they will keep on doing the job — with the cooperation of shippers and receivers of freight in conserving cars, and with the cooperation of the government.

Strategically located, the Norfolk and Western is a strong, vital railroad in the nation's great, mass transportation system. N. & W. wheels are rolling every minute, day and night, between the Midwest and the Virginia seacoast and between the North and the South — helping to keep the wheels of America rolling — to VICTORY.

LET'S GO! U.S.A. KEEP 'EM FLYING!

Norfolk and Western Railway

PRECISION TRANSPORTATION

COPR. 1942 N. & W. RY.

The State of the Nation's Health

(Continued from page 65)

This report certainly suggests that the American people in general are getting their quota of vitamins. I think there are several reasons why this should be so. One is that, in the commercial exploitation of food products in the past few decades, a large number of foods previously not widely used have begun to be regularly used in America.

Modern refrigeration, transportation and the commercial expansion of agricultural lands widely separated over the globe have brought such a variety of foods to us that it is hardly possible for anyone to enter a restaurant of any class and order any reasonably selected meal and not get an adequate ration of vitamins. Nor is it probable for the housewife to go to the modern grocery and not bring home a good armful of vitamin-containing foods.

The surveys which I have cited are, I will admit, not complete. I have had no experience in the southern delta states where I am assured the percentage of vitamin deficiency is high and where, because of climatic conditions even apart from the question of supply, the maintenance of a high vitamin level is difficult. Then to make the record complete the study of a series of groups who are neither *a priori* sick (as my hospital group were) or *a priori* well (as my industrial plant employees were) and placed geographically all over the country is required before we can assess accurately just exactly how much "hidden starvation" there is.

It is the working gospel of nearly all health evangelists that fitness results only from plenty of vigorous exercise, cold showers, rub downs, eight hours sleep and rough food. The importunities to engage in these means to physical perfection emanate officially from Miss Alice Marble, Assistant Director of National Physical Training for Women, and from Mr. Gene Tunney.

Now it is perfectly natural for these two persons to believe implicitly in the doctrine of exercise for fitness. They were both gifted with magnificent bodies and muscles that are models of the highest tonicity.

But we are not all built alike. There are 132,000,000 of us and the finger whorls of each are different. The tonicity of our muscle fibers is individually different also and each has his own peculiar digestive apparatus. I deprecate wholesale health advice for so many variations. For most under the age of 30 it is probable that Miss Marble and Mr. Tunney's program would be excellent. From 30 to 40 I would go slow. From 40 to 50 I would not change the previous habitual routine much. For those over 50 it would be better for all but one out of 20 to absent themselves from earshot of Miss Marble and Mr. Tunney entirely.

In thus reviewing critically the statements that have been made about our national health, I naturally do not wish to have my conclusions interpreted as meaning that I see no room for improvement, or that I discourage any effort in that direction. In such a time of national stress it is the duty of every citizen to assume individually the duty of raising his physical fitness to its finest point of efficiency. But we should be sure that our basic assumptions are correct and the conditioning should be done with some due regard to common sense and individual requirements.



"But Miss Clark, you can't get married. No one else around here knows how you've got the files arranged!"

We Could Lose This War

(Continued from page 60)

ture. It is supposed to relieve the pain in the pit of the stomach when the taxpayer starts thinking about where he is going to get the money to pay his income tax. (What sort of people does the Secretary of the Treasury think Americans are, anyway?) The House refused to authorize payment of $80,000 for the picture, but today there are many funds available from which to meet an unauthorized expense, even though Congress refuses to appropriate. The net effect of the picture was to inspire the national slogan: "Millions for defense but not one buck for Donald Duck." The House took the position that if Pearl Harbor and General MacArthur did not inspire unity it was no use depending on Donald Duck.

For weeks and months hearings were held on the Price Control Bill. Price control is abhorrent in principle because it strikes at the root of free enterprise. The situation, however, was such that there was no alternative. The obstacle in the way of prompt action was the group around Mr. Henderson, the price control administrator, who would help to administer control.

A view on stockbrokers

THE Dies Committee dug up the records of several of them. One had written articles urging revolution; another wrote that there is no essential difference between a stockbroker and a pirate. Another declared the American system has broken down. One was coauthor of a manifesto declaring belief in the excellence of the Soviet regime. The country was naturally apprehensive over price control in the hands of persons hostile to the American system, and thus unity was not helped nor morale inspired.

David A. Saposs was chief economist of the National Labor Relations Board. His record was so objectionable that Congress sought to get rid of him by refusing to make appropriation for his department. Without hesitation the Board changed the name of Saposs' department, retained the organization intact, including Saposs. He continued to perform the same duties in defiance of Congress. Congress was more successful in its second attempt but while Mr. Saposs left the N. L. R. B. he is on the federal pay roll today. The cause of national unity was not improved.

In response to public demand the House, by an overwhelming majority of about two to one, passed a bill amending the National Labor Relations Act. Despite public demand, the Senate pigeonholed the bill at the request of the Administration. Congressional mail indicates 80 per cent of the country in favor of labor legislation. National unity is not promoted when the voice of the people is stifled and legislation by Congress prevented.

Fast upon the heels of announcement

First choice for the defense of America's busy plants

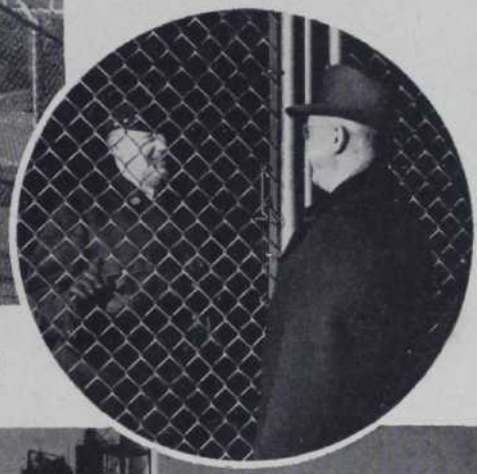


The parking lot is an important part of the modern plant. Fence protects workers' cars from thievery—helps watchmen maintain complete control of all entrance and exit.

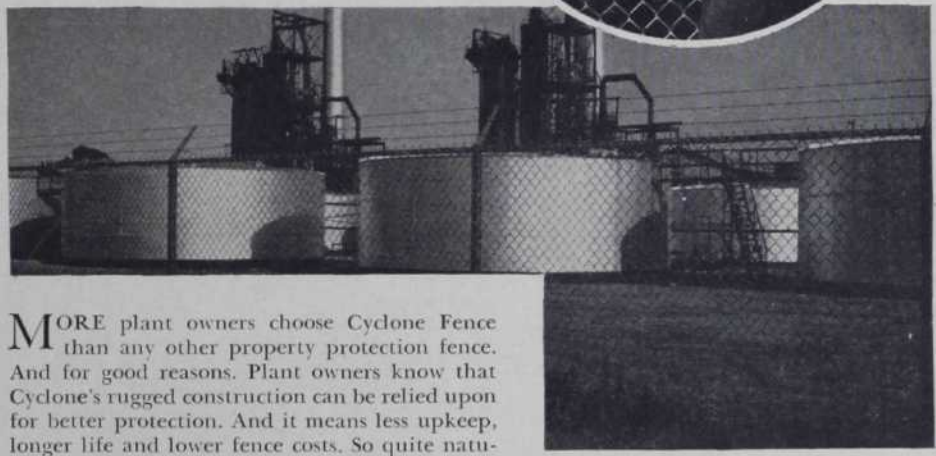
Power is too important to risk intentional or careless damage. Transmission lines, transformers and generating stations by the hundreds are guarded by Cyclone Fence.

Industry must be careful who is allowed in plants doing defense work. Cyclone Fence forces all traffic through closely guarded gates. Management can demand credentials from every person who enters the plant—can check on every piece of material taken out.





Oil must flow uninterrupted to America's Army, Navy, factories, trucks and autos. Many miles of Cyclone Fence have been built to protect refineries and pipe lines.



MORE plant owners choose Cyclone Fence than any other property protection fence. And for good reasons. Plant owners know that Cyclone's rugged construction can be relied upon for better protection. And it means less upkeep, longer life and lower fence costs. So quite naturally, when plans, blueprints and dies for defense production must be so closely guarded, they turn to Cyclone for fence.

Right now, our own factory-trained erection crews are building fences for plants all over the country. This work is being speeded as much as possible in order to help industry protect its valuable property and guard defense secrets. Always important—this protection is today an essential part of the defense production job.

CYCLONE FENCE DIVISION
(AMERICAN STEEL & WIRE COMPANY)
Waukegan, Ill. · Branches in Principal Cities
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UNITED STATES STEEL

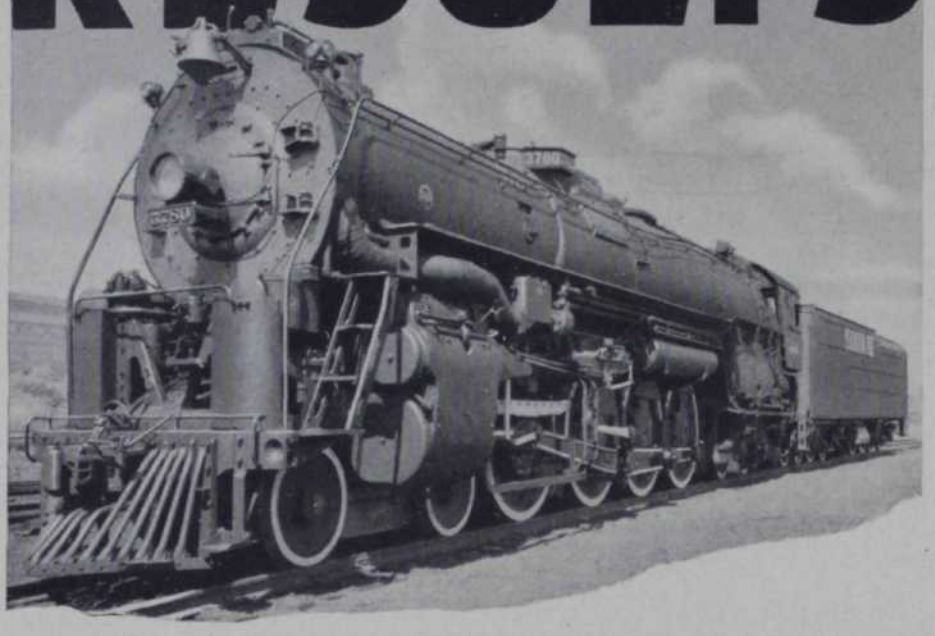
32-Page Book on Fence



Send for our free book on fence. Crammed full of facts, specifications and illustrations. Shows 14 types—for home, school, playground, and business. Buy no fence until you see what Cyclone has to offer.

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Please mail me, without obligation, a copy of "Your Fence—How to Choose It—How to Use It." I am interested in fencing: ☐ Industrial; ☐ Estate; ☐ Residence; ☐ School.
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RESULTS



...of a self-imposed preparedness

● Santa Fe has been privileged to play a full part in the gigantic tasks of transportation born of our defense effort.

Years of careful maintenance and steady improvement of power, rolling stock, roadbed and steel, has helped much to make that contribution more effective.

Nothing has been or will be permitted to interfere with the utilization of any Santa Fe facility required to help win this war. Within the limits of that supreme obligation, however, no effort will be spared to maintain for American shippers that dependable and efficient freight service that is a Santa Fe tradition.

For information on rates and services, consult your nearest Santa Fe representative, or write

J. J. GROGAN
General Freight Traffic Manager
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Santa Fe

that industry and labor agreed to cooperate for the duration of the emergency, comes announcement by David Beck of the Teamsters' Union of a plan to unionize the South. The plan is remarkable for its simplicity. Acknowledging it is almost impossible to organize the South, Mr. Beck's plan is to prevent handling of shipments from or to the South. The plan follows that employed by Chicago Teamsters' Union with reference to the Yakima Valley, Washington apples last winter, as described in NATION'S BUSINESS. Apple growers, it is recalled, declined to sign a closed shop agreement with the apple knockers' union. Chicago teamsters refused to handle apples, claiming producers were unfair to organized labor. The apples rotted in the freight yards. Unity based on the pledge of no labor legislation and the destruction of food required for war purposes is not possible while labor unions are permitted to destroy the products of factory and field without restraint or hindrance.

Fan dancers and morale

MORALE in some form might possibly survive boondoggling, night club entertainers, fan dancers and teaching children to amuse themselves in the midst of falling bombs, on the ground that such activities are the conception of moronic minds as to the best way to quarantine the dictators and establish and maintain democracy throughout the world. But unity will be difficult to preserve in the face of a labor policy which can only lead to collectivism as a reward for war effort.

Today America is threatened with the collectivism of labor. These leaders are forcing honest working men to strike—not against industry, not against management, not against private ownership—but against national defense, against all of America at the same time they are denying to others, through insistence upon the closed shop, the right to work. Since we have declared war against the aggression of dictators; since the President has requested and Congress has granted the most far-reaching legislation in the history of the Republic, irresponsible labor leaders have defied the wishes of the President, flouted the purpose of Congress, and jeopardized the safety of the Republic.

Today unionist collectivism hampers, retards and hinders production for defense. It defiantly ignores the public interest in the maintenance of industrial operation by unjust and uneconomic demands at a time of great national emergency. It constitutes a serious social and national menace, for the injury it seeks to inflict falls not upon industry alone but upon the safety and security of all the people.

The present tendency of unionist collectivism is to destroy individual private ownership, individual initiative, individual skill, individual creativeness, and individual independence.

It seems difficult for some people to realize that there exists such a thing as a sound public sentiment which does not like its sense of reasonableness to be outraged by the unreasonableness

that goes on in the Government. For the duration of the emergency, political animosities, for that matter all animosities, should be discouraged. No party group has a monopoly on patriotism. We all want to render good service to our Government, and for the time being the boondogglers and the fancy uplifters should stand aside, along with our social reformers.

This is still the country of the people who are at least supposed to enjoy the right of dictating their own measures, and the people are unable to understand why the business of saving the country should be put into the hands of those who heretofore have been concerned in undermining and destroying it. If we are not going Red outright, then why this continued coddling of the Reds and the inefficients? If the actor whose feathered nest has caused great controversy wishes to fight the Germans and the Japs, then let him grab a gun and go to it; and as for instructing children how to behave in moments of stress, I will take the good, wholesome country or town housewife in preference to the night club fan dancer.

We are engaged in the serious business of war. For years we have run along under a split or double program, recovery and reform. Recovery, of course, has been displaced by war, but reform still clings like a leech. Those who have heretofore been active in the effort to make over this country are taking advantage of the stress we now are in to promote and advance their scheme of collectivism. We ought to get down to serious business. We ought to bring to an end this driftwood existence. Resistance ought to be offered where the individual sense of decency and right is outraged, and the Congress ought to rise to the urgency of the moment, and it ought to strike out of any bill appropriations that, when expended, will result in nothing more than gigantic waste.

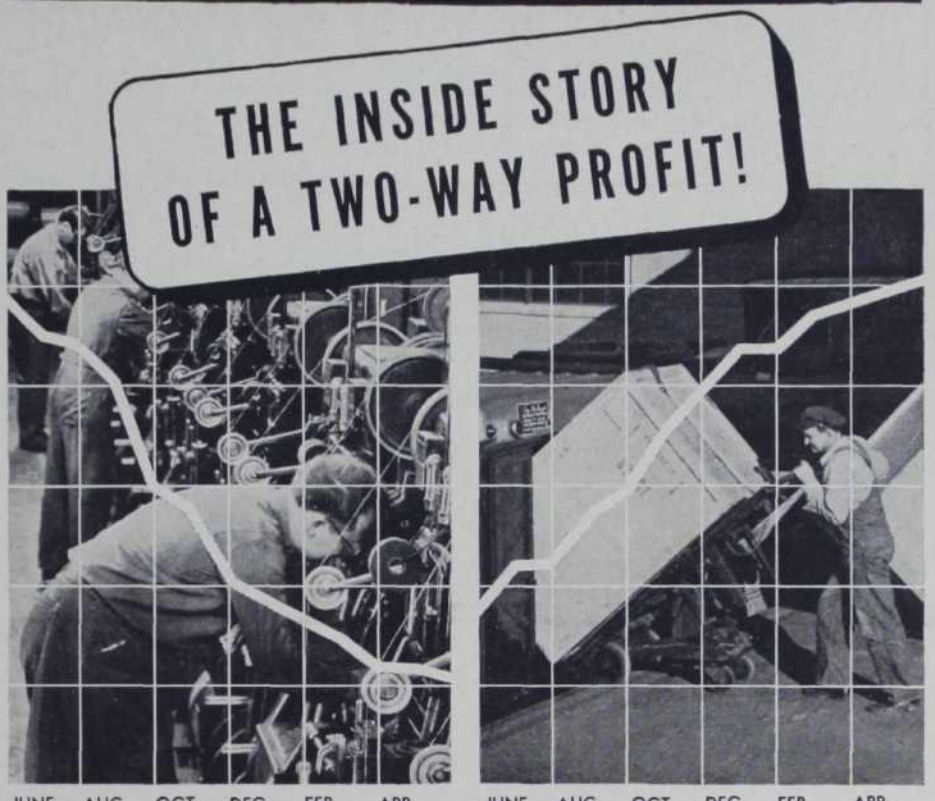
Cause of complacency

THE complaint goes up from many sections that there is a distressing lethargy and complacency evidenced on the part of the people. How can you expect other than that the war impulse should be depressed when they feel that the Government is treating war so lightly.

This is a time when activities should be carefully evaluated, since foolish ones will inevitably affect, if they do not destroy, unity. War is more important than reforms so dear to the hearts of some. Reforms can wait. War will not wait. Reform killed its twin brother, recovery. We could afford that, for the nation was rich. We cannot afford to let reform kill the chance of winning the war. If we are honest and sincere, and really desire unity, then we shall eliminate policies, practices, and causes subversive of that unity and morale.

What will the boys who return from the war—those who do return—say if the Government does not take this job more seriously? No divided nation can be a victorious nation. United we stand, divided we fall is as true today as when it was first uttered in 1776.

GOOD BUSINESS NEWS



DECREASED production costs INCREASED sales

IN THE fiscal year ending MAY 31st, 1940, the COSMOS CO.* did a business of $3,210,671 and wound up $95,214 *in the red.*

Without knowing the inside story, you might shrug this off as a case of bad management.

The facts prove otherwise. They show that this well-operated company, producing a quality product, in good demand, was seriously handicapped because its banking connection lacked vision and imposed many restrictions upon the manufacturer. Inability to supplement working capital with accommodations as needs required, resulted in production peaks and valleys that made unit costs excessive.

On June 1st, 1940 the company began to finance through Commercial Credit by cashing their receivables and obtaining advances against inventory located in their premises. From that day the story was different.

With an ample amount of working capital instantly available, production went on a regular schedule, and unit costs dropped. In five months, without any increase in sales volume, there was a profit of $59,165.

As the year went on, the improved financial position permitted an expansion of sales, bringing additional profits in higher ratio. Comparison shows:

AS OF	SALES	NET PROFIT
5-31-41 (12 mos.)	$3,907,080	$128,579
11-30-41 (6 mos.)	2,464,509	98,110

Over the year-and-a-half period net worth increased from $719,647 to $957,745, and without *any* additional capital investment.

* * * *

This is no exceptional example. Commercial Credit's OPEN ACCOUNT and INVENTORY Financing Plans stretch capital dollars beyond the limits of any routine financing. Thousands of concerns have used it . . . with amazing results. Why not get facts and figures to show what it could do for *your* company. Write for a copy of the new booklet—"THE TREASURER'S DILEMMA". Address Dept. 1402.

**A fictitious name, but the facts and figures, taken from our files, can be verified.*

COMMERCIAL CREDIT COMPANY

"Non-Notification" Open Account Financing

BALTIMORE

BOSTON NEW YORK CHICAGO SAN FRANCISCO LOS ANGELES PORTLAND, ORE.

CAPITAL AND SURPLUS MORE THAN $60,000,000

Governors Have Broad Powers

EMERGENCY powers of state governors are so broad that legislatures probably will not have to enact legislation on scale made necessary by first World War.

For this reason, special sessions in 1942—an off-legislative year—may be less numerous than situation would suggest.

Governors' war powers, in addition to complete supervision of state defense councils, range from organization of state guards to control of oil supplies.

Twenty-seven states passed state guard laws in 1940-1941; in 26 governor has authority to dispatch guard in response to calls for help from neighboring states.

Powers for defense

IN two states—Massachusetts and New Jersey—governors are authorized to undertake unusually broad wartime mobilization of state resources.

The governor of Massachusetts is permitted to "take any measures which he may deem proper to carry into effect any request of the President of the United States for action looking to the national defense or to the public safety."

Massachusetts last year also reenacted a 1917 statute authorizing the governor to take possession of any equipment and supplies in the state for service of the state or country. This act further permits the governor to seize, sell or distribute gratuitously cattle, poultry, provisions, fuel, gasoline and other materials to inhabitants of the state.

The New Jersey act, approved in December, directs the governor to give the United States in the present emergency any assistance within the power of the state.

He may organize and employ any and all resources within the state, whether men, properties or instrumentalities, and is directed to exercise any or all power convenient or necessary in his judgment to give such assistance.

Nine other states, under 1917 statutes, give the governor power to organize all of the state's resources. These states are Connecticut, Delaware, Iowa, Louisiana, New Hampshire, New Mexico, New York, North Carolina and Pennsylvania.

Virtually every state constitution, the Council of State Governments reports, provides the governor shall be the commander-in-chief of the militia and of the volunteer forces of the state. Twelve states have provided specifically by statute for the declaration of a state of martial law by the governor.

In 12 states also the governor can appoint special police to guard strategic areas.

Nebraska and New York give their governors especially wide powers in the use of county or municipal officers to enforce criminal laws.

Broad powers to deal with strikes in coal mines and public utilities have been given the governor of North Dakota.

In Connecticut the governor can suspend operation of hour restrictions upon the labor of minors and women during the emergency.

Statutes of nine states—Iowa, Louisiana, Maine, Massachusetts, New York, North Dakota, Oklahoma, Tennessee and Washington—grant their governors power to acquire land or other property for military use by condemnation, lease or purchase. Statutes further authorize governors to lease such land to the United States for defense purposes at a nominal consideration.

Funds for emergencies

FIVE states have made advance preparation for emergency financial demands resulting from outbreak of war.

Arkansas, Florida and Wyoming provide for use of a "governor's fund" in time of emergency. Nebraska has authorized governor to increase state department expenditures where essential. West Virginia has authorized governor to buy special equipment for emergency use.

Among other emergency powers granted governors are: Massachusetts—to order air raid protection and blackouts; Maryland—to draft civilians for employment; Colorado—to close highways; Florida—to establish priorities on oils, coal and other commodities.

Few coast states permit governors to move state capitals.

Power to summon legislature into meeting elsewhere than its regular seat is granted only in Arkansas, Connecticut, Indiana, Kentucky, Louisiana, Maine, Maryland, Massachusetts, Michigan, Mississippi, New Hampshire, Rhode Island, Texas and Wisconsin.

To Make Your Start Easy

Under present conditions our popular "modified" policies are particularly attractive. They carry a substantially lower premium for the first few years.

Details on request—no obligation.



The Prudential Insurance Company of America
Home Office, NEWARK, N. J.

CONTINENTAL CAN CO. proves 1½ MAY BE BETTER THAN 5!



ANOTHER EXAMPLE OF HOW TRUCK-TRAILERS ARE *Aiding America At War!*

WHEN THE CONTINENTAL CAN COMPANY plant in Los Angeles switched from heavy-duty trucks to light trucks with Fruehauf Trailers about a year ago, they did it to cut hauling costs.

But, as it turned out, the change-over became an important contribution to America's war-time program.

Formerly, Continental Can used 5-ton trucks for delivery of cans to the wide variety of packers they serve.

Then they heard the Trailer story—and replaced their heavy-duty 5-ton trucks with 1½-ton trucks pulling Fruehauf Trailers. And they were surprised to learn that the new units could handle even *bigger* loads than the heavy-duty trucks could carry.

This change-over cut hauling costs, of course, but even more important to Continental Can today are the ways in which the truck and trailer units are aiding America at war:

❶ **FEWER TRUCKS USED.** Instead of using five big trucks, Continental uses only three small trucks with five Trailers in "shuttle" operation. More tonnage moved with two less trucks.

❷ **SMALLER TRUCKS USED.** Many military operations demand heavy-duty trucks. By using Trailers, Continental (and companies in more than 100 other lines of business) have eliminated their need for heavy-duty motor units.

❸ **GASOLINE CONSERVED.** The small, 1½-ton trucks use less gasoline than the 5-ton units, even though hauling bigger loads. And, remember, only three trucks are used instead of five!



HOW "*Shuttle*" HELPS

During loading and unloading, only the Trailers stand idle. The trucks are on the road pulling other Trailers to their destinations. In Continental's case, this means fewer trucks are needed—because each is working constantly. Tie-ups of trucks and drivers, during loading and unloading, are eliminated.

If you use motor trucks, we urge that you discuss your haulage set-up with a trained Fruehauf man. His job, these days, is not only to help you cut your costs but to show you how you can do your hauling so that it will contribute to our nation's war-time program in other ways as well.

World's Largest Builders of Truck-Trailers

FRUEHAUF TRAILER COMPANY • DETROIT

Sales and Service in Principal Cities



Motor transport in war! One Ohio motor carrier is handling 500,000 pounds of freight a month for the government and for contract plants . . castings, machine parts, machine tools, sheet iron, steel, etc. . . every pound of it essential! And this is only one operator. Many thousands more are contributing equally toward winning the Battle of Production!

FRUEHAUF "ENGINEERED TRANSPORTATION" REG. U. S. PAT. OFF. **TRAILERS**

TRUCK-TRAILER TRANSPORT IS DOING AN ESSENTIAL JOB FOR ALL AMERICA

Price Control on Main Street

(Continued from page 62)

of the Labor Department's price investigators so that they may instruct members in "How to Become a Price Investigator." An army of investigators could then be offered under the guise of lady "Minute Men" for protection of consumers.

These Consumer Centers are important to business men because of their potential influence on public opinion in rationing and price control affairs. They are earnest, sincere crusaders. Business men should make it a point to see that their local centers are informed on the business man's viewpoint when price ceilings are adjusted. At present their information is coming mostly from other sources. If not told why, they may protest every time local merchants ask for a cent or two increase in selling prices, even though Mr. Henderson has promised to raise the ceiling whenever a merchant can show that his profit has evaporated.

A recent quotation from one of their bulletins illustrates the point. It reads:

> The milk companies immediately raised the price to the consumer more than enough to pay for the increase to the farmer.

And to show in which direction they lean insofar as employers are concerned, here is another quotation with reference to Price Control:

> We are, therefore, in favor of trying to control prices without fixing wages.

However, if the present attitude in the Office of Price Administration continues, business men should not worry too much over the possibility of volunteer hunters searching for minor infractions of price rulings. In addition to Mr. Henderson's declared intention not to put anyone out of business the law itself has protective measures for business men.

After a license has been granted to sell an item, Mr. Henderson cannot take that license away or even suspend it without a court order. No man's license can be revoked for more than a year and, if his license is taken up that only forbids him to sell the particular item for which he was licensed. Before he can be convicted and fined the Government must prove *wilful* violation.

Furthermore, a last minute provision inserted in the statute provides that no man *has* to sell unless he wants to. The provision probably isn't iron-clad because, if a merchant were holding an item like soap for better prices later, the Government could commandeer it. But nevertheless the provision is important if for no other reason than to show that Congress recognizes a man's right to refuse a sale if he wishes.

So far as the retailer is concerned, the most dangerous cloud apparent is a possibility that O.P.A. might set a maximum markup. If his customary markup has been 15 per cent and a limit of 12 per cent is decreed he will be in difficulty. With labor, transportation, taxes and wages all going up, it will be difficult enough to maintain the old margin without loss. There is also a time lag between the manufacturer's and retailer's point of sale. O.P.A. might set a manufacturer's price of $1 on an item that he had been selling to the retailer at $1.10 and for which the retailer charged $1.25. If O.P.A. set a retail price of $1.20 to go into immediate effect, the retailer would be caught because he would have his old $1.10 stock to sell at a lower markup while his cost of doing business is increasing. But here again, the O.P.A. spokesman said, the retailer could present his case to the local office or to his industry committee. If he can prove there is no profit in the $1.20 price, compensatory measures could be taken.

Authority for many things

IN THIS same connection it is also true that Mr. Henderson has repeatedly expressed an aversion to setting retail prices except in rare instances and when rationing is involved. But Mr. Henderson's past performances prove him unpredictable. Plenty of business men know that he can be mighty tough and the statute gives him authority to pry into almost every phase of a business man's affairs. He may coddle, cajole or scare 'em to death, but he has a way and influence enough to put over almost any idea that might occur to him.

As enforcement of the Act gets under way, consumers and retailers will find it has many more facets than price juggling. It is so closely tied up with rationing and shortages that a ruling on one will often have severe effect on the others.

Take sugar, for example. The threat of price fixing has apparently been enough to hold down cost to the consumer. Yet sugar rationing will raise the retailers' costs considerably. One of the big retailers sells as much as 4,000,000 pounds a week. He estimates that he will have to handle 8,000,000 stamps —enough to keep 50 clerks busy.

Handling the sugar itself is even more costly. Refiners put 80 per cent of their product in five, ten, 25 and 100 pound bags. They haven't the equipment to put it in smaller bags. The retailer will have to sack it in smaller containers. He will probably lose three or four pounds out of every 100 in the process.

Paper sacks, too, are running short. The time may come when the customer will have to bring his own sack.

Controlled prices and lack of automobile tires also team up to create inconveniences for the consumer. The Price Control Act authorizes two sets of prices on the same product. O.P.A. may decide that a low cost grocer can sell canned peas for 12 cents but a high cost grocer in another part of the city may be permitted to charge 14 cents. When Mrs.

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Jones, who lives near the high cost grocer, stops using her car for shopping because she can't get tires, she will have to buy the 14 cent peas or else take a long trip by bus, afoot or bicycle.

There are all sorts of implications in that picture including the small town merchant who may expect more business from local folks who once drove 80 or 100 miles to the nearest metropolis for a large part of their shopping. On the other hand super-markets and large suburban department stores who depended on customers with automobiles will have to find some other method for getting their customers.

Processed agricultural products are affected in various ways under the parity agreement. Items that had reached 110 per cent of parity or more on January 15 were rice, cottonseed, hogs, fat cattle, veal, lamb, chickens, eggs, wool and soybeans. Products in these categories should not go much higher unless parity goes sky high.

Some prices will go up

BUT products made largely from wheat, corn or cotton can still go higher before Mr. Henderson can touch them unless Mr. Wickard elects to hold them down by selling surpluses which the Government owns. There is still some question about beef and pork which are now far above parity but corn, used for fattening livestock, is several points below.

Products made from oats, barley, rye, flaxseed, potatoes, peanuts and butterfat can still go up considerably before O.P.A. can put a lid on them. Milk is untouchable because of marketing agreements. Most canned fruits and vegetables will doubtless go up because of marketing agreements in which the Government has already set a minimum price that canners must pay for them if they want to bid on federal contracts.

O.P.A. will probably have to enlarge its standards division considerably. The Act provides that standards must remain the same when a price is set. One of Mr. Henderson's first edicts was that bed sheets must bear labels stating that they were "seconds" or "substandard" if minimum specifications are not met. The order is regarded as typical of many others to follow and is just one more reason why the Government will probably call for another consignment of inspectors to see that manufacturers and processors use the same number of threads or the proper amount of coloring in their products.

As one retailer said to the writer:

> We'll have one hell of a time sacking sugar, making reports and trying to stay in business. We'll feel like fools wearing suits minus a coat lapel, but there's one consolation. Think how the gals are going to improve their figure with that sugar ration and give more detailed view of their legs when dresses get shorter.

No one should covet Mr. Henderson's job. If ever a person had a task of putting so many loose ends together with most of the ends frayed or sticky, his name hasn't been recorded. No wonder he wants to stay out of the retail field.

But can he?

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Shopping for the Office

(Continued from page 46)

answer was "no." Another bank, faced with a shortage of fireproof steel filing equipment, is now storing its deposit slips inside the vault.

For many years, steel filing cabinets and desks have been increasingly the fashion of the time. In desks, tribute was still paid to wood by painting to simulate timber grain. Now the camouflage has been reversed and wood desks are made to look like steel. Even the War Department is ordering wood office equipment in quantity.

Mixing steel and wood, mahogany and oak office furniture is likely to be one of the esthetic casualties of war. Maybe the boss' wife thought she had introduced a certain decorative sense of harmony into his office but, as new items are added in war-time, she may see her good work undone.

In an insurance office where two men were working at a double desk it became necessary recently to move it elsewhere and buy separate desks for each occupant. The best the purchasing agent could do was to take one small, plain desk and another so luxurious that it appeared to belong more appropriately in the president's office in New York. The two clerks tossed a coin for priority.

Soon you won't be able to get pencils with those attractive metal tips. But you probably won't notice the difference because the tip is now painted on, in colors to indicate the grade. Next year your calendar pad base likely will be made of some plastic instead of steel, but doubtless you will go on forgetting your appointments with dentists and government inspectors just as you always have. A line of items such as ledger trays is being made of Masonite.

Pins and clips for salvage

UNLESS they were embalmed in files, the life of pins and paper clips has always been short, ending ingloriously in the waste basket. In editorial offices, for instance, it was easier to order a new box of clips than to strip them off discarded proofs. Now they are being retrieved and used over again, or soon will be. To many other businesses the method of one metropolitan bank may be recommended.

"In all the years I've been here, we've never bought any paper clips," said the purchasing agent for this institution. "Oh, yes, we use them constantly. But enough come in over the counters to serve our needs, and we save 'em."

True, pins and clips don't consume enough steel to put any crimp in the nation's gun-making program. It isn't the wire of which they are made, but the tin coating to prevent them from rusting that causes an impending scarcity. Because the yellow men are marching in Malaya some substitute coating is required and doubtless will be devised.

Shortages of many items trace directly to the enormous orders from the Government. A single order was placed for 19,500,000 filing folders for the Navy, another for 400,000 wire desk trays, and at one time there was a call for 200,000 maple rulers. Believe it or not, 100 tons of paper go into the building of a battleship!

Training requires more paper

THERE are many reasons why this war is costing five times as much as World War I in terms of dollars required to kill one of the enemy. War is becoming more refined—if that is the word. For instance, it takes several times as many ring binders to train an officer as it did in 1917-18. Now, student officers and flying cadets require from three to six ring binders each, and you will find others scattered liberally all the way from the company orderly room to the chief of staff's office. Remembering this new technique, office managers will try to make one binder do the work of two.

Most of us hadn't realized until the sea lanes from southeastern Asia were closed that this is the age of rubber. In all the scramble for materials, no other caused such a flurry.

A Washington dealer in art supplies related an incident that illustrates the extent of the pressure. He happened to be in his shop on New Year's day when the phone rang and a lady with a secretarial manner asked for a special delivery on a can of rubber cement.

"Sorry, but I can't sell it," was the answer. "The O.P.M. won't permit us to." He was asked to hold the wire. Then came a very peremptory male voice:

"This is for Mr. Blank's office in the Treasury. Forget the O.P.M.; we'll take care of them. We want that rubber cement."

P.S. The executive got his rubber.

It may be annoying to purchasing agents, men whose slightest wish has long been law and scripture among salesmen, to be told that they may have only one pound of rubber bands at a time, but that's the way it is. Some of us may have thought that rubber bands, like suburban buses, have an unlimited capacity. But so precious is rubber today that every office boy ought to know a rubber band should not be stretched to more than six times its normal length, to get maximum use of it.

Requests for rubber seat cushions usually evoke only the raised eyebrow and shrug of shoulder from salesmen. But there is comfort for all erring scribblers in the knowledge that rubber erasers will likely be obtainable for a long time. They can be made of reclaimed rubber mixed with an abrasive. But fewer pencils will have rubbers on the end and stationers advise users to keep pencil stubs after they are too short to write, as long as a bit of erasing surface remains.

Certain types of paper, particularly those wood pulp papers made by the sulphite process, are becoming more ex-

pensive and difficult to obtain. This includes a wide range of paper of better quality than newsprint, but short of the quality represented by rag papers. As is generally known, chlorine used in bleaching is a vital war material with a high sanitary and surgical utility. This of course means that all bleached papers will be scarcer the longer the war continues. One manufacturer advertises that he is discontinuing a line of extra heavy filing folders in the former grade and replacing it with a new line of folders, "dressed in khaki," that is, in manilla.

Conservation is the word now, in office as in factory and store and home. The National Stationers Association set a good example when it began on December 20 to print its weekly Washington News Letter on both sides of the sheets. Many firms and organizations are doing likewise. When a change is necessary in letterheads, the association suggests that the remaining stock should be cropped at the top and re-engraved or printed in short size. This is facilitated in the case of the association's own stationery by placing its water mark in the lower left hand corner of the sheets.

In Washington some dealers are instructing their customers to save spools and containers and turn them in when ordering typewriter ribbons. No spool, no ribbon. And only Rip Van Winkles who have been out of circulation since the Japanese embargo last summer now ask for silk ribbons.

How to save supplies

TO HELP executives, buyers and others to conserve paper, E. Y. Horder, well known Chicago stationer, offers the following suggestions:

1. Write briefly and to the point; it's better business expression, anyway.
2. When you can't be brief, write and type on both sides of letterheads and second sheets.
3. Order from 25 to 50 per cent of your letterheads, memorandum forms and second sheets in a short size—5½" to 7" long—to use for short subjects.
4. Put carbon copy on back of letter being answered, and thus eliminate second sheets. This will reduce use of pins, clips and staples and likewise conserve filing space.
5. Use smaller size memo and scratch pads: 4" x 6" instead of 5" x 8"; 3" x 5" instead of 4" x 6"; seldom use 8½" x 11".
6. Buy lighter weight paper. Change from 20 substance weight to 16 weight, save 20 per cent pulp and in cost.
7. Use 6¾ size envelopes instead of larger, paper-consuming sizes.
8. Run all mimeograph and other duplicated bulletins, etc., on both sides of the paper.
9. Instruct your packing and shipping departments to use new materials in the most efficient manner and to re-use salvage from the receiving department.
10. Instruct your receiving department to open incoming cases, cartons and packages so carefully that containers and materials can be re-used.
11. Do not destroy any waste paper or paper products. Some local agency will collect them to be reclaimed.

Of course, office managers will recognize another side to this subject. That is the disruption that odd-size forms may



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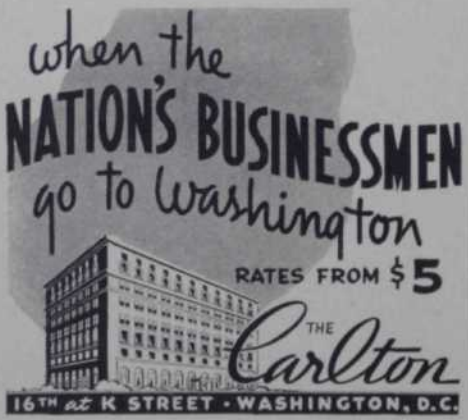
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cause in filing. When files and binders have been standardized, it is sometimes difficult to change the form without changing the receptacle. But the paper shortage may conceivably reach such a stage that this consideration becomes secondary.

Paper conservation means that many items bought for the office will not be packaged in the elaborate containers to which we have become accustomed. Everything from carbon paper to collapsible drinking cups will tend more and more during this crisis to be delivered in bulk.

We won't go back to the cracker barrel era in merchandising but we are temporarily deflected in that direction.

Makeshift forms are used

THE disruption of peace-time economy places a high premium on ingenuity and adaptability by consumers and retailers as well as manufacturers. There is the difficulty, for example, of complying with pre-war government regulations when they conflict with war controls.

In San Antonio a business buyer phoned his stationer to order a form for reporting to the Wage and Hour Division. The dealer was out of this item and it would take from 60 to 90 days to get delivery. The best he could do was to substitute an older form. It wouldn't do, the customer answered, because it was short two columns necessary to comply with regulations. What to do?

Charles Garvin, general manager of the National Stationers Association, happened to be in the store at the time. He talked to the buyer. Yes, he knew that regulations from Washington were regulations, but sometimes all of us have to adapt ourselves to circumstances. The only adjustment in this case seemed to be that of taking the old forms and ruling off the two extra columns in ink on the back.

"While we're attending to this chore of knocking the stuffing out of the Axis bandits, we will simply have to adapt ourselves to the inevitable," is the way Mr. Garvin sees this era of scarcity. He explained:

I know a blind man who says that, after the loss of his eyesight, everything seemed hopeless at first. But he learned so to adapt his other senses that now he can even distinguish colors by touching them with the tips of his fingers. The difference is that while his adjustment was for life, ours is only temporary.

The office buyer has to accustom himself to the paradox of placing smaller orders at more frequent intervals, or at least of taking deliveries on that basis, while at the same time recognizing that, if he overlooks something and runs out of a supply, he will have to get along in some way for from two to six months before he can obtain it. Printers have long complained about orders specifying delivery "yesterday," but they made little progress in educating buyers to plan ahead. Today that is being done for them by circumstances with which it is useless to reason and expostulate.

Finicky choice of paper for printing jobs can be indulged only by the leisurely purchaser.

"Ask your readers to try to see the retailer's problems with a little more sympathy," an office supply salesman exhorted. It is true that the retailer is the buffer for all sorts of troubles he has had no part in creating.

A customer fulminates about skyrocketing prices because a paper punch is billed at $2 today and he bought the same punch last week for $1.85. The reason is the new excise tax on machines. But next week will come from the manufacturers an announcement that the internal revenue folks have reconsidered. A punch is not a machine, after all, and it bears no tax.

"We were advised by the manufacturers that rubber stamps would be subject to the tax but erasers on pencils would not," the same retailer recalled. "We held a sales meeting and instructed all our men to that effect, then followed a revised order that the tax applied to both."

Confusion as to supplies

FROM week to week the materials allocation situation has changed so rapidly that no one in the Government, much less in the trade, could keep abreast of it. At one time there was unofficial word that no more steel would be available for office equipment for general use. Again it was said a considerable tonnage might be so allotted.

Both salesmen and order takers have become service men. The old curtain that always hung between buyer and salesmen has been rolled up and now the two meet on a 50-50 basis of mutual benefit. In this seller's market, the wise buyer casts off the traditional suspicion that a salesman is a peddler out to induce him to buy something he doesn't need, or a larger quantity than he needs, or at a higher price than he should pay. No more is the salesman lumped with solicitors and beggars. He is as welcome as the flowers in May, because he may part with a few reams of bond paper or a gross of pins.

In the words of Owen G. Bayless, former president of the National Stationers Association, dealers in office supplies are "trying to ration out our stocks as thinly as possible to satisfy as many customers as we can." They are again inspired by the same zeal that won the first World War, the spirit that Woodrow Wilson called "the spontaneous cooperation of a free people."

With that spirit so manifest in business, voluntary action makes compulsion by the Government unnecessary.

Retailers are sticking close to those sources of supply that have proved dependable in the past, in order to obtain as liberal rations as may be had. This suggests a final word of counsel to office buyers.

Stand by your local dealer, establish a close bond with him and he will get for you everything that he can. Trust the salesman who calls on you to look out for your interest.

He couldn't oversell you if he wanted to. He is the instrument through which your needs, your neighbor's and the Government's are balanced to serve a great necessity.

Nourish the Right of Assembly

(Continued from page 50)

ness men are full of humor and pathos. They reveal the long and tedious process through which men laid the foundation of economic and, through economic, political liberty. Though we have now gained a large measure of liberty, some of the demands of the early guilds sound startlingly similar to much that has been said in the past few years.

We talk rather glibly these days of freedom and human progress without much thought of the long, laborious process by which the liberty we enjoy, and the progress we have made, have been achieved. We little realize what a small contribution government, and those who govern, have made to human freedom and human progress. As a matter of fact, the secret of liberty, wherever it is found, lies in the voluntary associations of men and women.

The secret of liberty

WHAT I am trying to make clear is that the regenerative, the creative power of human society, has always been in the moral sense of the individual. The individual alone is powerless but, when he organizes a fellowship with other individuals, he multiplies his strength. The voluntary groups keep pressing up from the bottom against the static or repressive power of government.

Today, the secret of liberty is not in government or in governors or rulers, but in the power of many voluntary associations—the church, the lodge, business and civic associations, in political parties and, in a larger sense, in independent, self-governing villages, towns and cities. The greatest safeguard against the centralization of power in government lies in these voluntary associations which with grim determination have kept alive the right of suggestion, of petition, remonstrance, and, ultimately, of the ballot.

History teaches us that we have much more cause to fear the loss of our liberties through the grasp of power by governments and their leaders than by undue influence by any minorities, or pressure groups, or voluntary associations of any kind. People have forgotten the high value of remonstrance if they are to preserve political, economic and religious liberty. Remonstrance is a great purifier of government. That's why dictators silence or destroy every voluntary association of men.

Through centuries of effort, men in voluntary groups have fought for one small gain after another in self-government. Empires have crumbled, not because of economic adversity or the raids of vandals, but because their rulers have crushed the voluntary associations of men, made man the servant of the state.

The ancestors of the chamber of commerce were the ancient guilds and companies. Their records, for hundreds of years, in Europe, ran with the growth of human freedom. It is the long story of man learning laboriously, bit by bit, to govern himself, and to curb the autocracy and greed of arbitrary power. The achievements of these forerunners of the modern chamber of commerce made possible the progress of the western world.

A true chamber of commerce today is the essence of democracy. Its form of organization, its resistance to conformity; its free use of the right of remonstrance; its constant fight for economic freedom; and the ability and experience of its members, make it one of the most valuable of voluntary associations.

We often hear men say we have too many business and civic organizations, too many churches, too many political associations. Perhaps there is some economic or social waste in all these organizations, but it is a sign of the vitality of our social organism. Far better too many than too few. These organizations are the developers of men's minds and spirits. They are the ever-functioning schools in self-government. Liberty, and self-government on which it rests, cannot be achieved and forgotten. It is of slow and continuing growth and eternal vigilance is the price we pay for it. History shows that eternal vigilance is kept alive in the free associations of men who for so many centuries have fought their way from serfdom to the high estate of liberty under law.



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If you ever think of us back at General Electric—and we hope you do—you'll probably remember us as we were when you left. Then we were all talking about "defense." We *thought* we were busy: new buildings were going up, departments were being changed over to "defense" production, we were proud of the growing percentage of G-E production that was going into "defense" materials. We still think we were doing a pretty good job—for then. But we wish you could see us now—now that we're building for WAR!

When we talk to you who are out at the front facing the real thing, we realize that anything we can do seems pitifully small. But we do want to tell you, in all humility, that we're in there trying. And the fact that we're producing weapons for you—you whom we've worked beside and know—is an extra incentive, if that's necessary.

There are more than 125,000 of us now in the General Electric family—a lot more than when most of you left. There will be more yet, even though an increasing number will be leaving to join you in the harder and more dangerous job.

We say *G-E* men and women. But we have a broader concept now—bigger than any one company or person or job. For you and we, all of us, are above all *Americans*, buckling down to the biggest job we or anybody else has ever tackled. That's the way we feel about it. And we wanted you to know. *General Electric Co., Schenectady, N. Y.*

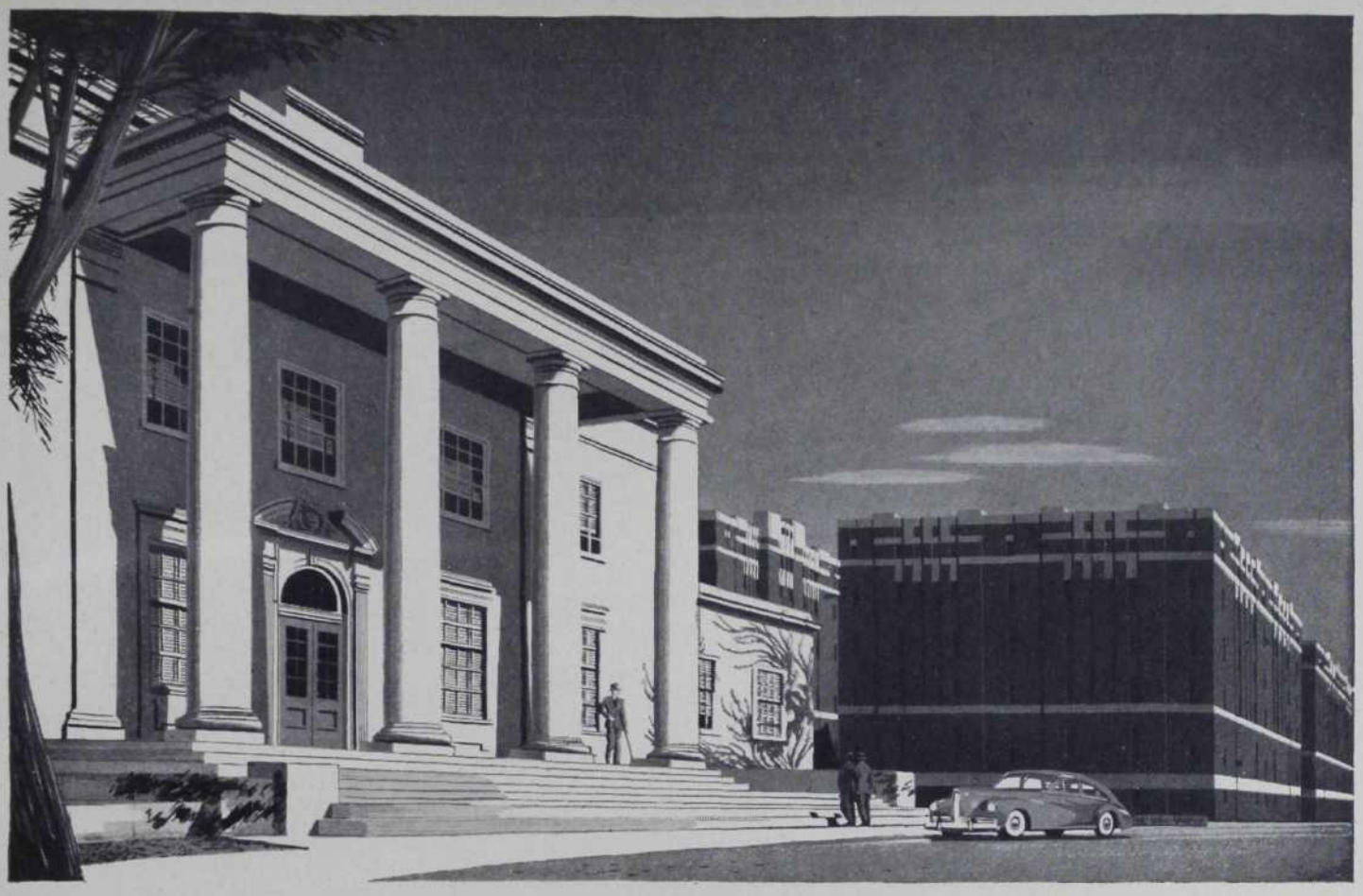
GENERAL ELECTRIC

952-264N4-211

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The Institute where Whiskies get a Post-Graduate Degree

ON A 52-ACRE CAMPUS just outside Louisville, Kentucky, stands a cluster of 15 imposing structures suggesting a great scientific institute.

It is the newest and most advanced distillery in the world . . . headquarters for Calvert research.

And in a sense this *is* a scientific institute . . . for here Calvert whiskies get their post-graduate degree.

Every whiskey, you see, starts out in life as grain in the bin . . . rye, barley or corn. Its elementary curriculum includes various basic steps . . . cooking, fermentation, distilling and barreling.

Then comes the day when the whiskey graduates from its charred oak barrel, having matured, and developed a character of its own.

Is this the end of a whiskey's "education"? Is it ready to be bottled and take its place in the world? *We don't think so.*

Distilling and aging are not the *end*—but the *beginning*—of the long course through which Calvert whiskies pass.

Calvert's "faculty" of university-trained scientists now selects, from the world's largest stock of fine whiskies and costly grain neutral spirits, those which have graduated with top honors. They are analyzed, tested, classified . . . in terms of flavor . . . bouquet — body — smoothness — and other desirable whiskey qualities.

Then comes the final . . . the most important step of all. Those rare whiskies and spirits are harmoniously *blended* . . . to emerge as a finer, higher type of whiskey.

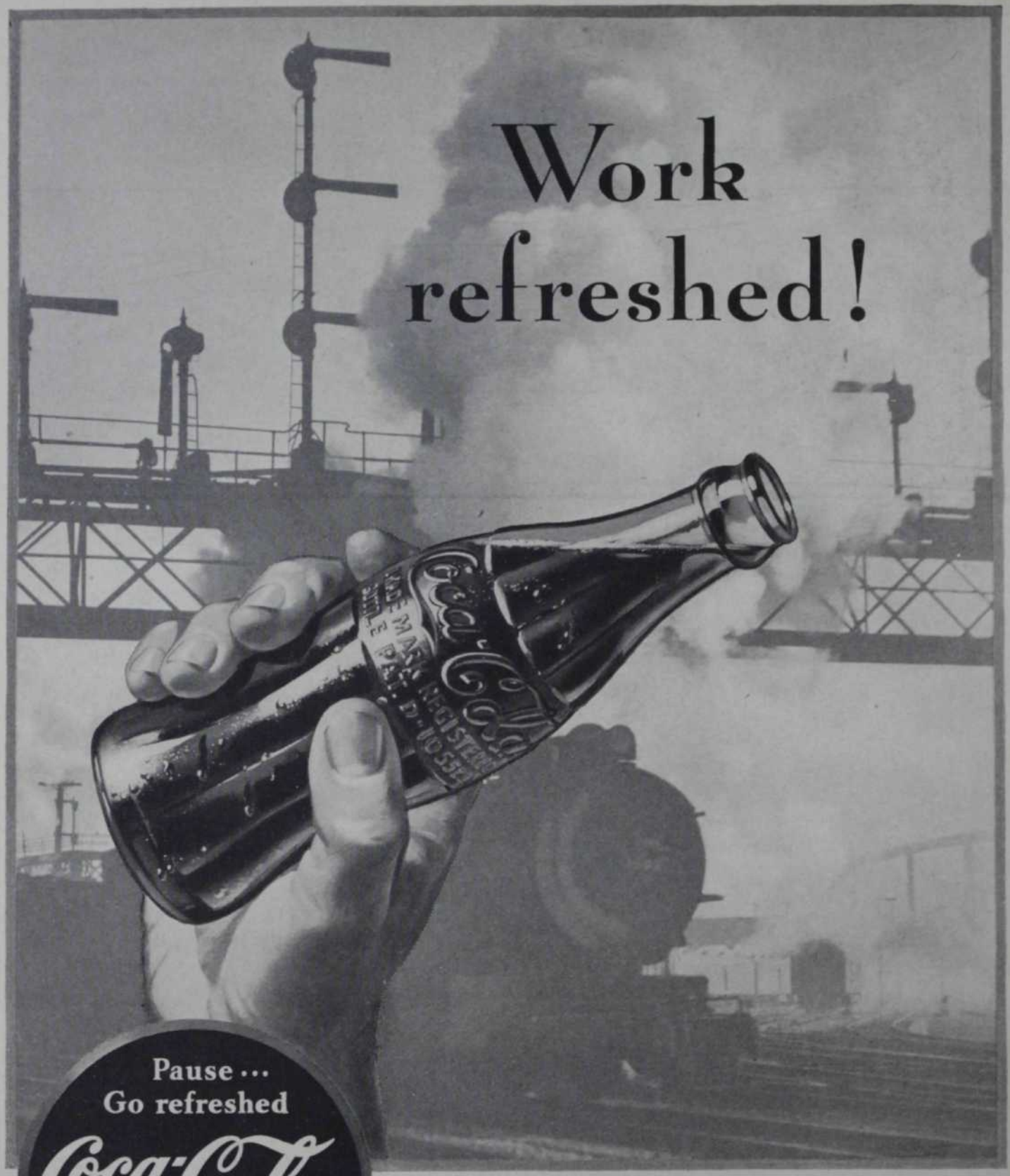
This post-graduate blending course results in the superb taste of Calvert whiskies . . . in their magnificent lightness, smoothness, and delicacy of flavor.

And we believe it also explains why Calvert is America's favorite luxury whiskey.

Calvert

The Institute of Blends

Calvert Distillers Corp., N. Y. C. BLENDED WHISKEY 86.8 Proof. *Calvert "Special": The straight whiskies in this product are 4 years or more old. 27½% straight whiskies, 72½% grain neutral spirits. Calvert "Reserve": The straight whiskies in this product are 5 years or more old. 35% straight whiskies, 65% grain neutral spirits.



Pause ... Go refreshed

Coca-Cola

TRADE-MARK REG. U. S. PAT. OFF.

You trust its quality

5¢

The pause that refreshes with ice-cold Coca-Cola is a pleasant way for workers to turn to refreshment without turning from work. It's a refreshing minute that helps on any job.

COPYRIGHT 1942, THE COCA-COLA COMPANY

O.K. Army — Here they Are!

OUT of observation of aerial tactics in the war zones, your Air Corps wrote the tactical specifications for an entirely new type of bomber. What we need, you said, is a medium bomber with "heavy bomber" striking power . . . a flying arsenal with heavy guns to pour shot and shell in all directions . . . a lightning-fast bomber that can outfly and outfight pursuit ships.

Martin designed and built that bomber for you —and with it the equipment for rapid production in fighting numbers. Since last April, these Martin B-26's have been joining the Army. Now, with our plants quadrupled and our working forces tripled, new swarms of these deadly Martin Bombers fly into the fray—to help beat Hitler at his own game.

By production, Hitler launched this brutal war. By production, with a 6-year start, he overran Europe. Now, by American production, our gallant fighting forces will bear aloft the torch of Liberty . . . through to Victory!

THE GLENN L. MARTIN COMPANY, BALTIMORE, MD., U. S. A.

Flying into Action

The Martin B-26 Fighting Bomber carries such potent fighting equipment as Martin power-operated gun turrets, Martin self-sealing fuel tanks, and extremely heavy armament. In addition to the B-26, Martin also is making "Mariner" Patrol Bombers for the Navy, and "Baltimore" Bombers for Britain.



Martin
AIRCRAFT
Builders of Dependable Aircraft Since 1909

WHAT! A girl training men to fly for Uncle Sam?

THE name is Lennox—Peggy Lennox. She's blonde. She's pretty. She may not look the part of a trainer of fighting men, but—

She is one of the few women pilots qualified to give instruction in the CAA flight training program. And the records at Randolph and Pensacola of the men who learned to fly from Peggy show she's doing a man-sized job of it. She's turned out pilots for the Army . . . for the Navy. Peggy is loyal to both arms of the service. Her only favorite is the favorite in every branch of the service—Camel cigarettes. She says: "It's always Camels with me—they're milder."



Don't let those eyes and that smile fool you. When this young lady starts talking airplanes—and what it takes to fly 'em—brother, you'd listen, too . . . just like these students above.

FLYING INSTRUCTOR
PEGGY LENNOX SAYS:

"THIS IS THE CIGARETTE FOR ME. **EXTRA MILD**— AND THERE'S SOMETHING SO CHEERING ABOUT CAMEL'S **GRAND FLAVOR"**





She may call you by your first name now and then, but when she calls you up for that final "check flight," you'd better know your loops inside and out. It's *strictly regulation* with her.



Yes, and with Instructor Peggy Lennox, it's strictly Camels, too. "Mildness is a rule with me," she explains. "That means slower-burning Camels. There's less nicotine in the smoke."

• "Extra mild," says Peggy Lennox. "Less nicotine in the smoke," adds the student, as they talk it over – over Camels in the pilot room above.

Yes, there *is* less nicotine in the smoke of slower-burning Camels . . . extra mildness...but that alone doesn't tell you why, with smokers in the service . . . in private life, as well . . . Camels are preferred.

No, there's something else...something *more*. Call it flavor, call it pleasure, call it what you will, you'll find it only in Camels. You'll *like* it!

The *smoke* of slower-burning Camels contains

28% LESS NICOTINE

than the average of the 4 other largest-selling cigarettes tested—less than any of them—according to independent scientific tests *of the smoke itself!*

CAMEL—THE CIGARETTE OF COSTLIER TOBACCOS



• BY BURNING 25% SLOWER than the average of the 4 other largest-selling brands tested – slower than any of them – Camels also give you a smoking *plus* equal, on the average, to

5 EXTRA SMOKES PER PACK!

R. J. Reynolds Tobacco Company
Winston-Salem, N. C.